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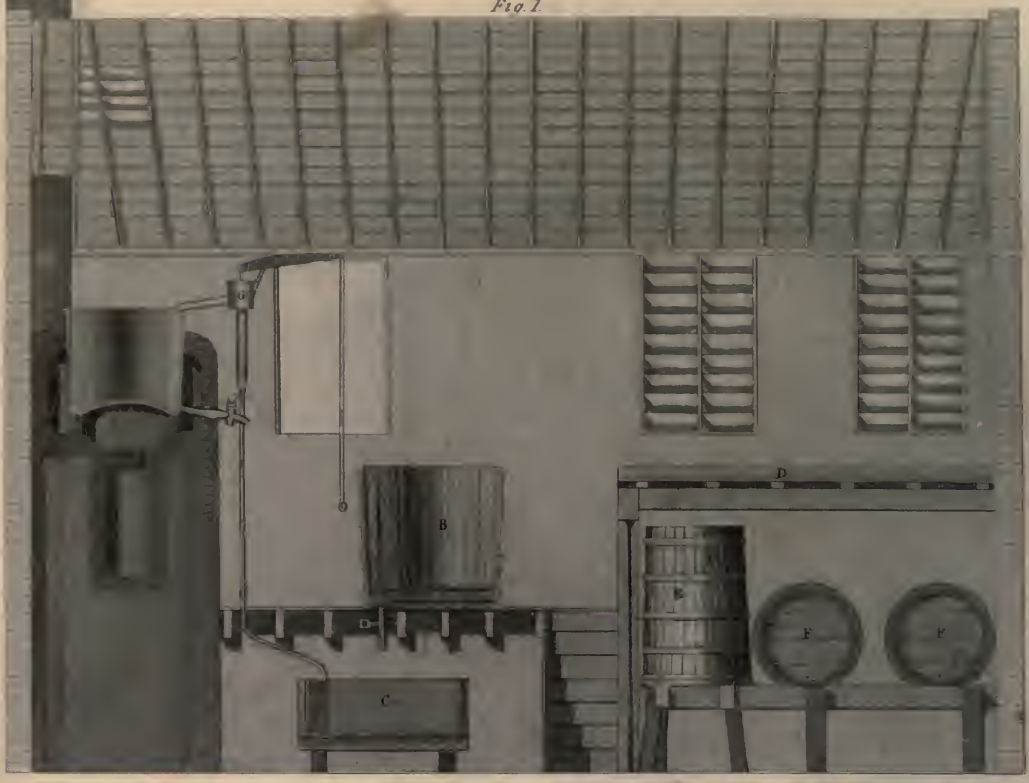

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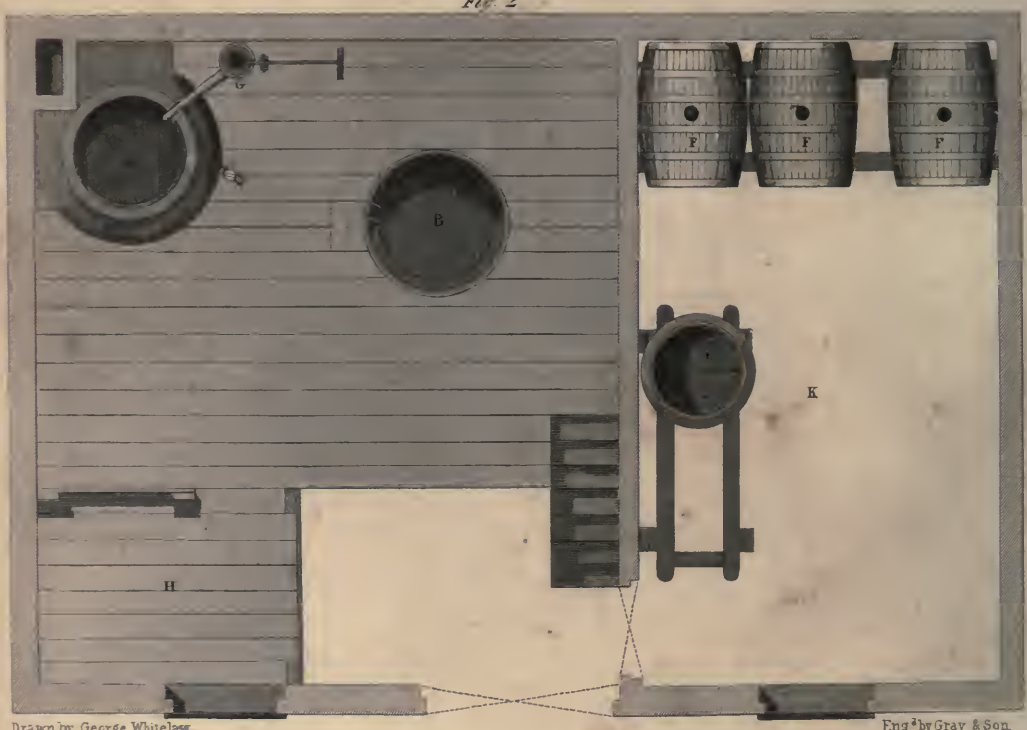

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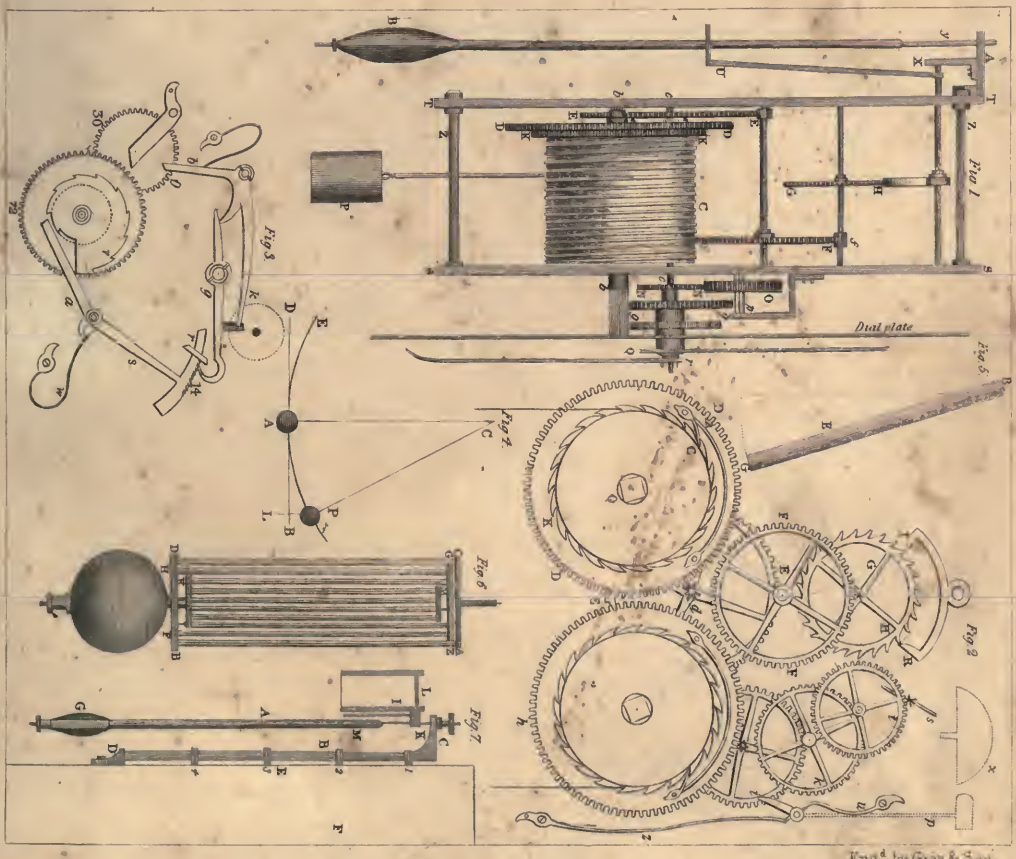

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ON

THE RISE AND PROGRESS

OF

LITERATURE.

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ON

THE RISE AND PROGRESS

OF

LITERATURE.

A close examination of animated Nature, in all its moral, mental, and physical attributes, will prove that man is distinguished from the inferior creatures of the earth by nothing so much as the possession of Literature and Science. Art, in the mechanical sense of the term, does not furnish so exact and conclusive a criterion between them; since it is in many instances approached, both in the manner of working, and in the effects produced, by the operations of Instinct; nay, sometimes we observe that the unerring felicity of Instinct defies competition by the elaborate contrivances of Art. But Science and Literature belong exclusively to man. In these he dreads no rivalry from the animals of more limited intelligence.

No less decisive will this test be found, when applied to mark the difference between rude and civilized humanity. From what cause that difference originally sprang, or how it was primarily manifested, it is not our present business to inquire. Enough, that reason and authentic history, surer guides than the freaks of ingenious speculation, concur to show not only that the savage is the degenerate man, but, further, that some torpor of the intellect, or some perverse determination of the will, must have conspired with outward circumstances to retard or reverse, in certain regions, that process of improvement which has, in others, been so signally displayed. Hence it is in those pursuits which exercise the higher faculties and interest the nobler feelings, that the distinction between different portions of mankind becomes most evident. To supply the exigencies of their physical condition, provision is made by the least cultivated beings; in works of manual dexterity the mere savage is often exquisitely skilled; in magnificence of design, and beauty of execution, Art has frequently attained prodigious heights in communities that rank but low on the scale of that general refinement, of which science and literature are the only unambiguous signs. But where this standard of comparison is erected, the savage shrinks at once from trial; the various tribes of civilized men arrange themselves in regular degrees; and at the summit appear those nations, whose superior state of scientific and literary culture vindicates for them both a claim of dignity and a title to dominion, more valid than any thing else could bestow. A single glance at the political aspect and position of mankind in the several quarters of the globe, is sufficient to corroborate the truth of this assertion. Europe, scarcely equal in extent to one-third of the African continent, and less than a fourth part of Asia or America, assumes the foremost place among them, and holds huge tracts of those enormous countries in absolute subjection. The great truth that knowledge is power has never received a more splendid illustration.

If we submit to a further scrutiny the proposed criterion of refinement, it will perhaps be found that of the two elements, of which it is made up, literature may be preferred to science, as an indication of general politeness. Not that great eminence in scientific pursuits can be achieved by a people without the existence of extraordinary intellectual abilities. But these abilities, and the occasions to employ them, may be restricted to a narrow class of individuals. The history of some ancient communities unquestionably demonstrates, both that science may flourish without literature, and that the powers and principles of science may be possessed by a brilliant few, while the mass of those around them are sunk in a deep gloom of comparative ignorance. Scientific principles may easily be turned into a mystery, and confined to a craft; and thus becoming the very badge of isolated castes, they may serve to enhance that barbarous pride, which men are so apt to derive even from

sources capable of infusing more liberal sentiments. But it is the essential property and pride of literature to blot out every ungenerous distinction, and to raise the tone of thought and feeling throughout all classes of society. Its interest, its glory, lie in the diffusion of refinement. It breathes no other atmosphere; it can exist in no other medium. The results of science, the fruits of the most sublime discoveries, may be enjoyed by those whose intellectual faculties are, of themselves, inert or powerless: but the productions of literature have no currency, and its heroes no renown, if there be not in the general mind that degree of taste and elevation, without which the most beautiful displays of genius would be as music to the deaf, or painting to the blind.

The experience of recent times supplies additional evidence of the inferiority of science to literature as a criterion of mental culture. Schools have arisen of men, who, while they affect a profound devotion to scientific pursuits, hold literature in very slender estimation. With them science is every thing, literary elegance is nothing: the useful before the ornamental, or rather the useful without the ornamental, receives their exclusive homage. The sublime in poetry, the pathetic in eloquence, the gay, the graceful, or the grand in composition, they not only disdain in the abstract, but regard with contempt or abhorrence the ministers of such delights. They would at once trample on the pearls, and rend the hands that scatter them. It would not be difficult to show that these brutal doctrines repose upon a false basis, an entire misconception of that usefulness in support of which they are promulgated; but it is even more evident that the minds of those who entertain them, however energetic and successful in the prosecution of science, still remain unimprinted by the last stamp of genuine refinement.

Yet, odious and hurtful as the doctrine of utility becomes, when it assumes this shape, it may be traced in the outset to an extension of views arising not unnaturally from the inherent difference between literature and science. This difference lies not in their sources, but in the aims and principles which govern their direction. Both have their common source in the energies of the human intellect; both call into operation the inventive faculty as well as the judgment; in both, splendour of achievement results from force and intrepidity of genius. But their aims and tendencies must be regarded as essentially distinct. Of science, the paramount object is truth; of literature, the object is beauty. The business of science is to instruct; of literature, the functions are not duly discharged unless delight accompany instruction. Science seeks to convince the understanding; literature to captivate the heart. Even when the two are so conjoined, by a happy effort of genius, that scientific truths assume the attractions of a literary dress, it is still easy to recognize the separate elements, and assign to each its native province. Thus poetry sometimes sings of celestial phenomena; but it requires no great fund of astronomical learning, to detect the results of scientific research and calculation beneath the glittering garb flung round them by the muse. Political economy puts on the disguise of fictitious narrative; but a little attention suffices to remove the mask of the novelist, and reveal the features of the sage. The science of metaphysics owes far the greater part of its fame and popularity to the graces with which literary talent has adorned its speculations; but the meagre army of truths, which these speculations are enabled to marshall, would command small reverence, were they banished from the realm of fancy, and forced to array themselves under no banner more gorgeous than their own.

The distinction here pointed out is one of considerable importance in itself, and which must be kept steadily in mind, as a clue to the whole course of the ensuing remarks. It may prove sufficient, if fully comprehended, to show, without resorting to the precarious aid of definition, what that literature is, of which the rise and progress are now to be described. Definitions of literature are commonly too wide and vague to mark out the proper limits of such an inquiry. The definition, for example, suggested by an eloquent writer,* whose name stands high on the list of modern critics, embraces too large a field; and while it may serve to distinguish between literature and the exact sciences, does not trace the nicer boundaries that divide the art of composition from the subject-matter on which it is exerted, or those naked statements of the subject-matter, of which language, in its simplest usage, is capable. "*All* those mental exertions which have human life and man himself, for their object, and which, without requiring any corporeal matter on which to operate, display intellect as embodied in written language," belong not to the province of literature, in the light under which it is useful and pleasing to contemplate it, and under which, indeed, it was practically contemplated by the author whose words are here cited. Something higher we

* Lectures on the History of Literature, ancient and modern, by FREDERICK SCHLEGEL.

would understand by the name of literature; something higher must be understood, if its peculiar aims and properties have already been correctly developed. Poetry, not mere versification; history, not the bare record of facts; rhetoric, that charms even where it fails to persuade; philosophy, when clothed with grace or energy of style; these are the great branches of genuine literature, and to these alone will attention be invited as the proper topics of the following dissertation.

One part, however, of Schlegel's definition, commands our unqualified assent. Intellect *embodied in written language* is an essential characteristic of literature. Literature, as the very name denotes, is the creation of the alphabet. By this it is not meant to be implied that there was no fecundity of genius, and no progress in the art of composition, before the invention of letters. Analogy and positive argument combine to prove the contrary. Thus, amid the slight records of antediluvian society, nothing occurs to evince the existence of a written alphabet; yet, if we reason by analogy from the state of other arts, it will appear that, at that remote period, composition must have made some steps in advance of its earliest simplicity: the voice of poetry could not be mute where Jubal smote the lyre, nor would even the precision of a technical vocabulary be wanting where the artificers in brass and iron were taught by Tubalcain. Even in a far later day, some of the noblest productions of the human intellect were demonstrably anterior to the current use of letters; and, at this hour, genius throws out fitful flashes among uncultivated tribes, who have no visible signs to perpetuate the glories of eloquence or song. But without the introduction of such signs, it is obvious that the fruits of genius can put on no stable form: their existence must be precarious, their effects feeble and confined. Without letters, no people has attained a high degree of general politeness; and the mind of Homer himself would have exerted no permanent influence upon literature, had his strains never assumed a more substantial shape than they bore while entrusted solely to the memory of rhapsodists.

The first rise of literature, even when thus viewed in its legitimate connexion with the art of writing, carries us back into the bosom of a distant age. In some of its branches, the date of the incipient efforts of genius is fairly ascertained; the real antiquity of other branches is doubtful and obscure. But among the curious and perplexing questions which the whole latitude of the subject would open up, it is necessary to exercise a spirit of forbearance, and to adhere pretty closely to a line of argument, of which clearness and continuity must be the distinguishing features. It would be an intricate, as well as a laborious task, to explore the faint original appearances of literature in every nation; or, having everywhere discovered the source, to pursue the current of those streams, which, becoming isolated in their progress, have constituted no parts of a general system. A direct continuous course must be looked for, if we would speculate with advantageous results True it is that literature, like the empires of the ancient world, has had its periods of rise and fall, of prosperity and decay; true is it, moreover, that the places of literary, as of political ascendency, have varied from time to time; nevertheless, throughout the whole history of literature, we can, by strict examination, discover a bond of union, and a principle of regular transmission. The illustrious heritage has passed into new hands, without ultimately losing a particle of splendour. Nations have soared or sunk upon the scale of comparative refinement; but never has genius been beheld in a state of universal abeyance.

Yet, in another respect, hinted at above, the analogy between literature and empire may be pushed a little further. There are states and kingdoms whose interests are so much centered in themselves, so detached from foreign relations, that their history seems to have no points in contact with that of the rest of mankind. It forms no links in the great chain of political events. And there are bodies of literature similarly circumstanced: replete, perhaps, with native graces, and interesting in their local history, but cut off from all connexion with the course of general refinement, and bearing no relation to the development of mental power in the most civilized parts of the globe. It would be hard, for instance, to show in what manner the literature of China has acted upon that of other countries, or contributed to the general advancement of taste or knowledge. Nay, the same remark may be applied, in cases where its truth is not at first sight so apparent. The literature of India, ancient in its origin, affluent in its stores, and probably destined, from the attention newly excited in favour of every thing relating to the vast regions, to which it belongs, to become more intimately blended with the details of European education, has hitherto been destitute of real influence upon the progress of polite learning. With a language, for which enthusiasts challenge the character of faultless excellence, and which, in fulness of expression,

sweetness of tone, and regularity of structure, at least rivals the most perfect of those Western tongues, to which it bears a signal affinity; with an antiquity retiring, on a very reasonable computation, to the distance of three thousand years; with treasures of thought and imagery, on which the strains of Vyasa and Valmiki are enough to confer immortal renown; covered as Indian literature is with these attractions, it has needed the aid of recent munificence * to introduce it, as a subject of study, even into the foremost seats of British education. And in an inquiry, such as the present, according to the necessary rule already laid down, not all the beauties of which it may justly boast, nor the strong temptations to digress, which these hold out, will obtain for it a place. Other branches of Oriental literature, endowed with equal charms, cannot, in deference to the same rule, be considered in the order of precedence due to their respective dates. Thus, it is not until they are brought, through the medium of the Moorish empire in Spain, and of the crusades, into a near relation with the works of European fancy, that the tales and poetry of Arabia and Persia will be entitled to particular notice.

It is with a keen feeling of regret that, in searching for the true fountain-head of that literature, whose history is unbroken, and whose progress is part of our actual experience, we are constrained to pass by, for the present, a still more venerable portion of the intellectual treasures of the East. That any one who has studied the poetry, history, and philosophy of the Hebrews, even merely as specimens of composition, should lightly esteem them, is impossible. In lyric flow and fire, in crushing force, in majesty that seems still to echo the awful sounds, once heard beneath the thunder-clouds of Sinai, the poetry of the ancient Scriptures is the most superb that ever burned within the breast of man. The picturesque simplicity of their narrative gives an equal charm to the historical books. Vigour, beauty, sententiousness, variety, enrich and adorn the ethical parts of the collection. Nor is that seeming artlessness, which constitutes a principal charm of these writings, either naturally incompatible with the observance of certain rules, or actually uncontrolled by such as denote an intimate acquaintance with the management of style. Moreover, it must be granted that these brilliant qualities of a literature, which at last excited the warmest interest among cultivated nations, have produced effects easily discernible in many works of modern genius. But that Literature whose sun has never set, from the first moment of its appearance above the horizon; whose continuous current has rolled down from remote times to our own day; was not derived from the confessedly more ancient literature of Israel. For ages the elder stream did not intermingle its waters with that of later birth indeed, but of more wide and permanent dominion. We shall hereafter, at the proper period, have to speak of their union: meanwhile, though the capital branches of grave composition had been enriched by the Hebrews, at least five centuries before the earliest memorials of Grecian genius, the latter must be allowed to occupy the foremost position in a sketch of general literature.

The Greeks, in a dream of national vanity, gave out their noblest stocks for the offspring of their own soil. They were ashamed to deduce their origin from any country, whose inhabitants they justly deemed inferior to themselves in the arts of war and peace. This fanciful hypothesis, however false as far as regards the people, becomes true when applied to one part of their intellectual history. Their literature was indeed autochthonal. The rise of mental refinement among them was independent of other races of men; and its development was their own work. Their literary greatness, whose remains are a brighter trophy than the memory of their martial deeds or of their political systems, was the growth of the beautiful region which it adorned; and the same hands which reaped the field had sown it. It is not denied that they knew of the intellectual progress of nations anterior to themselves, nor that materials for thought to fashion, or imagination to embellish, were drawn by them, to a large extent, from foreign sources. But as it was with the language, so was it with the literature of the Greeks. Just as their language, after its principles were once fixed, and its vocabulary was established on a broad basis, while it admitted contributions from other lands, caused them to pass through an assimilating process of naturalization; so, to the ideas that poured in from various quarters, their plastic minds gave a new consistent shape and an exalted value. Thus, among the elements of their mythology, originally discordant, though blended by genius into a wonderful semblance of uniformity, we perceive strong traces of the Oriental and Egyptian creeds; but the parts taken from them have been cast in a fresh mould, and reproduced in more captivating lineaments.

* The late colonel Boden, of the East India Company's Service, has bequeathed his whole property to the University of Oxford for the foundation of a Sanscrit professorship, and the encouragement of Sanscrit learning. The first Professor was elected in 1832.

The monstrous is subdued into the vast; the grotesque is softened into the graceful; and a fine spirit of humanity is diffused over the rude proportions of the primeval figures. Such, likewise, has been the case with the Grecian mental philosophy. Many of its dogmas, some of its most remarkable forms, are evidently derived from Egypt or the East; but all that tends to beautify the mean, to harmonize the incongruous, or to enliven the dull; all that converts the simple precepts of morality, or the crude material of metaphysics, into an elegant department of literature; belongs to the Greeks themselves. From the first dawn of intellectual culture among them they were creators of something new, not mechanical echoers of the old. Upon the earliest manifestations of their genius there is no foreign stamp: their literature displays at once a proper, peculiar character. Its aspect is not Egyptian; for, though proficient in many branches of science; in medicine, astronomy, mechanics, chemistry, mathematics; Egypt had no literature. Nor is it Oriental; for, with the exception of those hints in religion and philosophy, to which we have already alluded, the East imparted none of her mental treasures to the ancient Greeks. Even the Phœnicians, the oriental people with whom Greece had the closest and most constant relations, were of no service in this respect. They, too, were devoid of literature beyond the mere rudiments of philosophic speculation; too deeply engrossed with their commercial adventures to yield more than a passing thought to less gainful pursuits. Yet it must not be forgotten that to them the Greeks were indebted for those means of perpetuating the fruits of intellectual exertion, of which they made such glorious use. Whatever uncertainty may hang about some parts of the legend of Cadmus, there can be no doubt that Greece received the inestimable gift of an ALPHABET from the shores of Phœnicia.

That the practice of writing, however, did not at once become common among the Grecian tribes, and that the materials of the art were scarce and costly, was perhaps as fortunate for their first efforts in composition, as it has been for posterity that the art was applied in time to snatch from the frail tenure of memory, and fix in an enduring shape, the finest monuments of their genius. The mere process of writing might have impaired that free, flowing, and exuberant character, which probably belonged to their earliest productions, since it is so conspicuously manifested in the most ancient that still remain. Conjecture guided by analogy, our only light in examining those distant times, appears to indicate that from these remains we may correctly infer the nature of preceding attempts. The main-spring of intellectual exertion among the Greeks was the same that has acted upon all nations, who have not derived their literature from imitation; that joyous activity of mental power which breaks out wherever circumstances allow it to find scope, that desire to embody thought and feeling in a cognizable shape, and to impress upon the minds of others a copy of our own, of which original genius is universally conscious. Poetry, a primitive production in every region of the earth, springing out of principles that are inherent in the human soul, was a natural vehicle for emotions too powerful to be buried in silence; and one that presented itself the more readily while memory, which is so much assisted by the mechanism of versification, formed the chief means of perpetuating the results of mental labour. It was natural, too, that religious emotion, as one of the most vivid and universal feelings of man, should be early embodied in the poetry of a simple age. But those theories are fallacious, which assume that direct addresses to the Gods, or lyric hymns, as parts of a public ritual, were the primary form of poetical composition among the Greeks. It must be remembered that of their poetry, previous to Homer, we have not even a fragment on which to reason. Many names, indeed, of more ancient poets are recorded, and works ascribed to some of the most famous of them are extant at this day: but the spuriousness of these is too manifest to admit of controversy. From Homer alone, and from the portraiture of elder bards, which certain passages of the Homeric poems supply, we must learn the properties of the earliest Grecian minstrelsy This evidence makes it plain that religious invocation was but an incidental portion of the minstrel's lay, and that the homage due to the deities was principally paid in a lively exhibition of their characters and adventures, a setting forth of mythological traditions, and a display of that faith which traced the interference of divine agency in every turn of human affairs. In short it is not more certain that poetry was the first form of Grecian literature, than that the very rudiments of that poetry appeared in the guise of HEROIC song. For this there was found a rich profusion of appropriate and inspiring themes; and the chivalrous propensities of a people, whose legends abounded in such topics, ensured popularity for the strains in which they were recorded. Nor was there any lack of other circumstances favourable to the rise and growth of heroic poetry. The pride of chiefs, the spirit of clanship, the love of ancestral distinction, com-

bined to elicit and reward the skill of those who could gratify passions so vehement. Hence not only Ionia, that seat of the Greeks where the most brilliant success in this species of composition was attained, but almost every part of the countries possessed by them, resounded with the voice of minstrels. Absurd as it is to imagine that the contributions of many separate bards could have been blended into poems of such marked unity and surpassing lustre as the Iliad and Odyssey, it is yet undoubtedly true that the bards were a numerous class. The "*fames of the heroes*," such as Achilles chanted to the harp,* the Argonautic expedition, the siege of Thebes, the death of Meleager, above all the "tale of Troy," were the most prominent subjects of their lays. By the constant celebration of these favourite themes the powers of the Grecian mind were called out and cherished, the language was improved in copiousness and harmony, and the versification was moulded into an exquisite structure, which no subsequent endeavours were able to excel. Brighter, from time to time, shone the gleams of creative fancy; sweeter and more sweet arose the sounds that were heard in every quarter, until at last came that burst of amazing sweetness, strength, and majesty, which was destined to overpower all previous strains, and to fill the ears of posterity with its own music.

That great authors represent the times in which they flourish is an opinion commonly advanced and admitted. The proposition is true in relation to those who have taken their subjects from their own times, and so have been induced and enabled to draw from the life a picture of contemporary manners, feelings, and events. But it is more generally true to say that a great author represents *the mind* of his age; partly as by his influence on others he moulds their tastes and understandings to his personal bent, and still more as his genius empowers him to seize in its real essence the spirit of the time, to raise it to the highest pitch, to embody it in the most striking forms, and to bequeath for the instruction of future generations an unerring index to the intellectual condition of his own. Thus, in the poetry of Homer,† while we can perceive that he lived on the margin, as it were, of the heroic age, and that the state of things and manners around him was in some respects altered from that which he describes, we recognize withal a sincere though splendid image of the mental attainments, tastes, and tendencies of his Grecian contemporaries. What the Greeks knew, thought, felt, loved, admired, despised, hated, twenty-seven centuries ago, may be gathered from his strains as fully and freshly as if there had been no interval between them and ourselves Whatever improvements, and doubtless they were many, he might make on the language of his countrymen; or on the compass and variety of that metre, to whose first principles the genius of the tongue itself must have led in the very dawn of their poetry; such as we find it in his poems we may infer to have been the prevailing style of composition in his day. Such in kind, however inferior in excellence, was the character of all that Greece could yet show of a literary nature, and had later efforts redeemed from oral recitation a mass of contemporary verse, the sole change required in alluding to it would have been one of epithet, from the *Homeric* to the *Heroic* literature. Nevertheless, in the case of Homer, as in that of all transcendent genius, the powers and properties of an individual mind are deeply impressed upon his works. There is much in them which could not, we may be well assured, have emanated from any other mind. He had all that the minstrels of his age possessed: he had a great deal, to the measure and stature of which they never attained.

To analyse the qualities of Homer's genius would happily be a superfluous task. No student of general literature is ignorant of these—of his sublimity and pathos, his tenderness and simplicity, his inexhaustible vigour, that seems to revel in the endless display of prodigious energies. The universality of his powers is their most astonishing attribute. He is not great in any one thing; he is greatest in all things. He imagines with equal ease the terrible, the beautiful, the mean, the loathsome; he paints them with equal force. In his descriptions of external nature, in his exhibitions of human character and passion, no matter what the subject, he exhausts its capabilities. His pictures are true to the minutest touch; his men and women are made of flesh and blood. They lose not a jot of their humanity for being cast in a heroic mould. He transfers himself into the bosoms of those whom he brings into action; masters the interior springs of their spiritual mechanism; and makes them move, look, speak, and do, exactly as they would in real circumstances. If Shakspeare appears to surpass him in this particular, it is only because the shades of character have been multiplied, and the expressions of passion varied, since the time of Homer, by a widened range of circumstances, and an increased diversity of manners and con-

* Il. B. ix. v. 189. See the Museum Criticum, v. 1. p. 244.

† B. C. 900.

ditions. But how ridiculous to suppose that such an attribute could be the joint property of several contemporary poets! When it has been proved that the characters of Lear and Othello were made up of patch-work, it may be believed that those of Helen and Achilles were eked out by the contributions of different minds.

Scarcely does it seem necessary to take further notice of that strange theory, which denies the individuality of the author of the Iliad, and asserts that, in the age of Solon and Pisistratus, the poem was not merely reduced to writing, but was then for the first time compiled out of separate lays into an epic whole. As if a series of national songs could have been brought to cohere with so much smoothness; or would have evinced such unity of plot and purpose; or have been confined to so small a segment of the Trojan story; or have given such prominence to a single Thessalian hero; or have displayed throughout the characteristics of an identical and inimitable genius! Under all the shapes, with which French ignorance and German erudition, have clothed it, this hypothesis is equally untenable; and those who, while the genuine impulses of feeling and judgment prompt them to reject it, have not sufficient leisure or learning to examine the matter critically, may rest satisfied that there is no difficulty in the belief of a single author comparable to the difficulties of the opposite opinion. There may be difficulties upon the one side, but there are impossibilities upon the other. Intent, like all poets of the school of nature, not upon himself but his subject, Homer has told us nothing of his personal history. All biography that relates to him is of a fabulous character; but, holding a steady course between credulity and scepticism, we may be assured of a few points of primary importance; to wit, that his name, whatever its etymology, has been rightly transmitted to us; that his principal residence was in the delicious climate of Ionia; and that though he belonged, as a poet, to a class, of which he is the glorious representative, yet that he excelled in a high degree, all his brethren, and was as much the light of his own age, as he has been the wonder of those which have succeeded it.

A more rational question than that above alluded to, was raised even by some of the ancient critics, as to the other great poem ascribed to Homer. There are certainly some traces in the vocabulary, syntax, mythology, and manners of the Odyssey, which, compared with those of the Iliad, appear to indicate a later period and a different author. On the other hand, it is hard to believe that Greece produced two minds, so kindred in strength and spirit; not only similar in kind, but equal in degree; and perhaps this last consideration should be suffered to outweigh all arguments, however plausible, in favour of a divided authorship. Moreover, the Return of Ulysses, while it was a natural theme for a bard who had sung the Wrath and Glory of the son of Peleus, necessarily led to scenes and subjects which may account for the larger portion of the discrepancies between the poems. At least the interval between them could not have been wide. They are compositions of the same class. In both there is the same general cast of thought, language, and versification; the same attachment to heroic life in all its adventurous varieties; the same views of the external world; the same mellifluous but masculine forms of speech; the same flexible harmony and rich cadences of metre.

The beauties of the Homeric poems were so striking in themselves, and so well calculated to rivet the national affections of the Greeks, that we can discover nothing surprising in the great and permanent influence which they exerted over all subsequent branches of Grecian literature. The marvel is that this influence should be least perceptible upon the immediate successor of Homer. The tone and temper of Hesiod's * poetry are marked by a greater difference from his, than even many of the prose compositions which afterwards appeared. The juniority of this poet to Homer is proved not more by those verbal and metrical peculiarities, which speak so plainly to the ears of a critical scholar, than by something in the turn of thought and choice of subjects that evinces a further removal from the fountain-heads of natural feeling. We are forced to suppose the lapse of not less than a century, from the age of the Iliad and Odyssey to that of the Theogony and the Works and Days. What a change from the deeds of soldiers to domestic arrangements and the cultivation of the soil! from "moving accidents by flood or field" to moral precepts and the details of celestial genealogy! It seems as if either the era of adventures were gone for ever, or the poet wished it to be so. He would call roving clans and fierce marauders to agriculture, to commerce, to all the beneficent arts of peace! We see that the didactic strains of the Works and Days were meant to unteach the spirit of the heroic times, and to heal the wounds which they had left behind them. Nor is it less evident that the Theogony, a poem whose authenticity has been rather unreasonably questioned, must have been posterior to the Homeric pictures of

* B. C. 800.

the gods. It was in regular sequence that after the bard should come the system-maker, with an attempt to reduce to order the desultory sallies of an imagination, which had given its own colouring to every thing that fell within its range. Perhaps, too, since Hesiod belonged, by residence at least, to a part of European Greece, his breast was imbued with the spirit of that Orphic poetry, of which we have no genuine remains, but which was certainly didactic in its tone, and devoted to the inculcation of ethics and theology. Now the Orphic poetry, together with the rites of the Bacchanalian worship, first introduced into Thrace, seem to have taken hold of the Grecian mind subsequently to the epoch of Homer. A contemplative cast of disposition, clearly discernible in his strains, will likewise serve to explain why Hesiod should have inclined to the mysteries of a symbolical religion, rather than to the more popular and romantic representations of the Homeric muse. The genius of the elder and far greater poet asserted, however, in this, as in all other points, a decided ascendency. We recognize it already in those Hymns in honour of the deities, commonly called Homeric, which came not, indeed, from Homer himself, but some of which are probably little later than the age of Hesiod, about eight centuries before the Christian era.

These Hymns* form the connecting link between the Epic poetry, which, after being carried to perfection by Homer, ceased for a long period to be successfully cultivated by the Greeks, and those Lyric effusions, under whose shape their inspiration was next bodied forth. The steps of the transition can be distinctly traced. Even the recitations of Heroic verse had been sustained by a simple musical accompaniment; but the music, to which the Hymns were sung, was apparently of a more prominent character, and thus led on to that decided influence of the lyre and pipe, which had so strong an effect upon the metre, style, and whole construction of the later poetry. Again, in the Epic narrative, the person of the minstrel was almost entirely concealed; but in the Hymns, as in the strains of Hesiod, it became more visible, and so prepared the minds of Grecian audiences for those explicit revelations of individual feeling, in which Lyric poetry, the poetry of emotion, largely indulges. Through all the Greek Lyric compositions, whether appearing in odes, in songs, or in the choruses of Tragedy and Comedy, this is the predominant tone. We find it in the enthusiasm and bitter fierceness of Archilochus;† in the thrilling, burning, heart-searching energies of love-tortured Sappho;* in the regal spirit and lofty pride that mixes itself up with all the fire of Pindar:† three illustrious names that mark the close of each successive century from the date of Hesiod, down to that of the Persian war, one of the most distinguished epochs in the literary history of Greece.

During this long interval of three hundred years, of which the remains are miserably scanty in comparison with its extent and importance, there occurred many events of vast moment to the progress of Grecian literature. It includes the age of Solon,‡ and the reduction of the old heroic minstrelsy to writing, of which the practice had then become current, and the materials abundant. It includes the rise of prose composition in the works of the early historians,§ whose chronicles, though but a few fragments of them survive, appear evidently to have set the example, and paved the way, for the immortal muses of Herodotus. It embraces, also, the separation of the Greek tongue into dialects, a thing observable in every language, but rendered most conspicuous in this instance, by the rank and value of the several bodies of literature, thus distinguished from each other. It is true that, from the mode in which the ravages of time have operated, the relics of Ionic and Attic literature are by so much the most considerable, as to throw the rest into the shade; yet the Æolic and Dorian branches, to judge even from the fragments we possess, maintained an equal elevation, at least during the period now marked out, and until the culminating star of Athenian genius usurped the sky. While the heroic times, and those immediately succeeding them, still endured, and the forms of manners and policy among the Grecian tribes were nearly uniform, there was one general language of composition, somewhat modified by circumstances, chiefly of a local nature. Homer on the coasts of Asia Minor, Hesiod in Bœotia, and other poets in different quarters, employed the same form of their native tongue, diversified in none of its essential characteristics; and that form was undoubtedly the current speech of their countrymen, so far adapted to the exigencies of versification, and subjected to such occasional process of extension or elision, as was possible in the day of no grammars and glossaries, without risk of baulking the comprehension of their hearers. But with the various forms of life and government that followed the decline of the heroic age, there arose simultaneous variations in the language and complexion of Greek

* B. C. 750. † B. C. 700.

* B. C. 600. † B. C. 500. ‡ B. C. 600.
§ Cadmus of Miletus, B. C. 600, Hecatæus, B. C. 500, &c.

poetry, as well as in its concomitant music and dancing. In accordance with the simple but flowing rhythm of the Ionians, their compositions were commonly either of a soft, or of a buoyant and brilliant character; while the Æolic and Dorian harp resounded in unison with more deep and thrilling strains, as it was swept by the movements of more impetuous passion. And thus, too, the gradations were fine and gentle by which the heroic verse and diction passed into the chief varieties of Ionian metre, and the peculiarities of the Ionian dialect, finally subsiding into the kindred Attic: but the changes made by the Doric and Æolian lyrists on the old metrical canon were abrupt and violent, and their dialects, retaining all the roughest collocations and inflections of the antique language, sought to revive or create a diction of the utmost strength and sternness. The opposite attributes of the two principal races, are strikingly displayed in these differences; the Ionic elegance and airiness, contrasted with the lofty aspirations and the solemn and earnest disposition of the Dorian tribes.

Little later in its origin than the Lyric poetry of the Greeks, their Elegiac poetry flowed from the same source, though not by the same channel. Of the metre and language of this style of composition, moulded by an easy process out of the Homeric, Tyrtæus * gave the first example. The stirring war-songs of this poet are conceived in the true spirit of Homer. They are even marked by a similar prominence of the subject over the person and individual feelings of the author; and thus differ widely from the martial lays of the troubadours, Bertrand de Born, Rambaud de Vaqueiras, and other heroes of the Provençal literature, who have sometimes been compared with him. Allied in tone and temper to the Tyrtæan elegy were the patriotic strains of Callinus :† but the instinctive taste of the Greeks soon confined the elegiac distich to subjects for which it was better suited; themes of a plaintive, ethical, or domestic character. With Mimnermus of Colophon,‡ the elegy assumed a tone of amatory softness, blended with gentle melancholy; and by Simonides§ of Ceos it was established in its funereal functions. Yet in the monumental inscriptions of Simonides and his brethren, there still beat some pulses of the old heroic vein: it is in a different department of elegiac verse that we catch mingling traces of the Hesiodic poetry. In that poetry may be detected the rudiments of Greek philosophy, and the poetical dress was preferred, long after the time of Hesiod, for those speculations upon nature, morality, and politics, in which his spirit was partly revived by Solon and his sage contemporaries. From what we know of the seven wise men, that celebrated band which included the Athenian legislator, it is plain that they were the founders of the school of gnomic poets, for whose sententious maxims the elegiac couplet was so well calculated, as to be at once adopted by them. How far the verses of this complexion still extant under the names of Solon, Theognis,* and Phocylides, are authentic, is very questionable; but there can be no hesitation in admitting them as specimens of *the kind* of composition, in which these writers exercised their poetical talents.

A single glance at the exquisite remains of Sappho and Simonides is enough to awaken the wish, keen in proportion to its hopelessness, that time and barbarism had spared a larger share of the Greek lyric and elegiac literature. Fortunate, however, it is, that in the former province we can still point to the strains of at least one immortal poet. The great name of Pindar stands alone, like some solitary mass of ancient architecture, as if to reveal the beauty and majesty of the whole system to which it appertained. It is true that even of this poet the entire works have not survived: for Pindar, as we might learn from Horace, were there no other authority for the fact, displayed his powers in various styles of lyric poetry; in the wild dithyramb, the devout pæan, the gay and graceful glee; and still more pleasingly, perhaps, in odes of an elegiac character, in which he seems to have consoled the sorrows of the mourner by cheerful views of immortality and gorgeous visions of Elysium; while, amid the wreck of all these compositions, nothing has been left unmutilated except forty-five triumphal lays in honour of victors in the public games. Yet it may be believed that time in this respect has not been cruel to the fame of Pindar. Considering the importance attached, in the eyes of Greece, to every thing connected with her great celebrations, the high rank of the chief Pindaric heroes, and the passion for power and splendour that was manifestly inherent in the poet's mind, it is almost certain that he bestowed his utmost efforts upon that class of his productions to which the extant odes belong. Pindar himself, whose notions of poetical dignity, respect for his own art, and confidence in his own genius, are eminently conspicuous, nowhere implies, even by a distant hint, that he would strike the lyre to

* B. C. 690. † B. C. 630.
‡ B. C. 600. § B. C. 550.

* Theognis, B. C. 550. Phocylides, B. C. 540.

other themes with livelier pride or more intense exertion.

The most careless reader of these odes must be struck by the excessive admiration of wealth, magnificence, and every species of greatness, to which we have alluded as a characteristic of Pindar's mind. Splendour was the passion of his soul: splendour of achievement, splendour of renown, splendour of station and outward circumstances. His very pride seems to have suggested to him that nothing but splendour was worthy of his muse. His genius, to use a figure of his own, was the eagle of Jove, that would not be severed from the sceptre and the god. These aristocratic predilections, this enthusiastic attachment to munificent monarchs and chiefs of ancient fame, were in perfect unison with the whole tenor of his destiny; born, as he was, in the midst of the Pythian festival, living surrounded by shows of solemn pomp, and dying, as he had lived, in the full blaze of public ceremony, in the centre of a theatre, and while rapt in those emotions of rejoicing sympathy, which such scenes were sure to awaken in his bosom. To those, however, who may deem apology requisite for the indulgence of so stately a temper, it may be urged in behalf of Pindar, that, as in the case of many remarkable poets, the abstract feeling of veneration was predominant in his mental constitution, and that it was called forth not merely by rank and opulence among mankind, but even more powerfully by the contemplation of the divine attributes. Hence that glow of piety which shines so brightly in his odes, sometimes breaking out in expressions of the deepest awe, or in sublime pictures of deity, and sometimes assuming an aspect of moral beauty, adding force and lustre to the lessons of wisdom. The latter modification of religious feeling has given birth to some of the noblest passages in the poetry of Pindar. He was well aware that emotion does not exclude sentiment; that the ethics of the heart are not less sound than those of the brain; and that nature is often hurried, in moments of excitement, into the innermost shrines of truth. But he knew, likewise, that the philosophy of such moments is prompt and peremptory; oracular not syllogistic; and this knowledge has secured him from frequently offending against the genuine character of lyric song by lengthened trains of moral reflection. His example, indeed, strongly supports a doctrine primarily suggested by the study of the heart itself, that the lyric transport should not be abated by many thoughts of a meditative cast; and that the middle region, which certain critics have discovered; that mild and temperate clime in which they place the ethical and philosophic ode; is properly the province not of lyric but of didactic poetry. No opposition to this doctrine can fairly be grounded upon the strains of moral sentiment, so frequently found in the choral parts of ancient tragedy. For it may be argued that these are the offspring of peculiar circumstances, allowable, on a principle of contrast, as points of repose amid the passions of the drama; that they are, at whatever length delivered, still the dictates of a moral sense, brought into *sudden* energy by the excitement of the moment; and that, upon the whole, the greater portion of the choric odes rather abound in glowing portraitures of the objects of sense, in rapid narration, in brief allusions to heroic or divine achievements, in short in all those brilliant qualities that adorn the verse of Pindar. A rapid movement, though perfectly consistent with the utmost grace in the transitions, is impressed upon the whole style of this genuine lyrist; distinguishing on the one hand his bursts of moral feeling from the formality of didactic poetry, and on the other his sketches of incident or action from the copiousness of epic narrative. The latter distinction should be especially noted by those, who would understand wherein consists both the resemblance and the difference of heroic and lyric song. Narrative is a prominent feature of both; but the narrative of the Epos abounds in full details, and dwells with lingering fondness upon the minutest particulars of an action; whereas the narrative of the ode is of a summary and impetuous character, bounding from part to part of a history with unflagging vigour, and touching only upon the most salient and striking points. This is the true source of nearly all the obscurity which modern readers, not so well versed as the ancients were in the ground-work of their own heroic legends and family traditions, have to complain of in the writings of Pindar; for nothing can be less like his style than the laboured incoherence and affected wildness of many of his imitators, whose faults, though belonging entirely to themselves, have been unjustly visited upon the name of their master.

The diction of Pindar, being founded upon a Homeric basis, and sparingly mixed up with Doric and Æolic peculiarities, has no philological value as a specimen of dialect. But his works have a double value as pertaining to the Doric school, and thus affording something, out of a mass of lost poetry and philosophy, to set off against the vast preponderance of Ionian and Attic literature. His lofty temper, and undisguised antipathy to the democratic principle, are strongly expressive of that school, and in

complete harmony with the oligarchical constitution of the Dorian states. To the same cause, heightened by the political position of the Thebans throughout the struggle between Greece and her Persian invaders, must be imputed the coldness of his homage to liberty, the lack of frequency and fervour in his allusions to the efforts of contemporary patriotism. And hence it is, that, though the date of Pindar corresponds with that of the Persian war, we must look to other writers for proofs of the animating influence which that event exerted upon the feelings, the intellects, and the literature of the Greeks.

Æschylus,* born seven years earlier than Pindar, appears, by a strange coincidence, to have made his first public exhibition a few months before the Theban lyrist produced the first of his extant odes, of which the date can be ascertained. The name of this great poet marks an era of twofold interest and importance; the rise of the Athenian dialect and literature, and the commencement of the regular drama. A tendency towards this most prominent and palpable species of imitative composition is so strikingly displayed in every development of Grecian intellect, that we are not surprised to find Aristotle identifying imitation with the very essence of poetry. Nowhere is it shown more evidently than in the most ancient works. Plato does not hesitate to call Homer, in express terms, the father of Tragedy. But, however strongly the imitative principle might manifest itself in heroic song, or in other kinds of composition, it was hardly possible, in rude and boisterous times, for the stately fabric of the theatre to arise. Progressive approximations to this conclusion were made, however, in various parts of Greece, as the habitations of men became more settled, and greater attention was bestowed upon the culture of peaceful arts and enjoyments. Mimetic performances were gradually blended with Bacchanalian hymns and other rites of a serious or mirthful character. On the soil of Attica the first decided step to dramatic exhibitions was taken by Thespis;† many improvements were made by his successor and scholar Phrynicus;‡ and at last, under the impulse given by the genius of Æschylus, the migratory waggon and temporary scaffold were exchanged for a stage; dialogue was introduced, and by degrees established in due preeminence over the lyric effusions of the chorus; theatrical dress and decoration became sumptuous and effective; and Tragedy assumed, in shape and in substance, its noblest attributes. Hitherto the art had been in embryo, a mere larva struggling into form; now it started up as the finished specimen, perfect in all its members, although hues of beauty and powers of flight were afterwards added or increased.

Æschylus is a glorious example of the Athenian character in its highest perfection; genius, patriotism, and valour. The virtues of the soldier-citizen, called forth by the shock of foreign arms, and inflamed by the remembrance of hard-earned triumphs, have given peculiar force to the poetry of one, who had personally shared the dangers of the conflict. It is everywhere the language of a hero, and seems to resound with the noise of battle. At the same time, the innate propensities of the mind of Æschylus, as well as the emotions naturally excited by the Persian invasion, and by the great part which Athens had sustained in the contest, are to be traced in the daring flights and lofty conceptions of his muse. There was something gigantic in his mental character, that found congenial elements in the antique mythology and legends of Greece; in the Titans who combated with Jove, the founders of extinct dynasties, and those deeds and crimes of the olden time, which were magnified by the mist of intervening ages into features of transcendent greatness or atrocity. That ideal standard, which all poetry erects for itself, since all poetry has more or less of an ideal tincture in its composition, was clothed, in his imagination, with an aspect of supernatural strength, wisdom, or power. Hence it is, that beings and faculties of more than mortal mould are so often conjured within the circle of this potent enchanter. Hence, too, the extravagance and eccentricity of thought and diction, which have always been pointed out as the chief faults of Æschylus. His metaphors, like the masks of his invention, are exaggerated images; his genius, like his actors, bellows through a trumpet. Yet, though fonder of commanding our wonder than our sympathy, he was not without an intimate knowledge of the human heart, and sometimes penetrates the soul of his readers by touches of exquisite feeling. Occasionally, likewise, there is a simplicity of language, continued through long passages, that is the more astonishing in his plays, when we recollect how close they lie to the confines of lyric song, and what a perpetual struggle Æschylus must have maintained against the inflation of ideas and expression, which is incidental to that species of poetry. But simplicity, as a general characteristic, is to be sought, not in the style but in the plan of his tragedies. The primitive artlessness, and direct movement of his plots cannot be exceeded. In comparing them with the dramatic productions of

* B. C. 500. † B. C. 535. ‡ B. C. 511.

later times, it is necessary to keep constantly in remembrance that the ancient and modern drama are constructed upon different principles. In the ancient drama the plot arises out of the expansion of a single incident: no wonder that it is simple! In the modern drama the plot arises out of the compression of a whole narrative: no wonder that it is intricate!

Even upon the plays of Sophocles,* who is universally acknowledged to have carried Greek tragedy to the highest pitch of perfection, this original principle of structure had a prodigious effect. But he was more of an artist than Æschylus: he was more happy in the selection and arrangement of his fables; and abounds more in the well-wrought interest and striking reverses, which Aristotle instructs us to esteem as the triumphs of dramatic skill. That these are compatible with a rigid unity of action is sufficiently proved by the manner in which Sophocles has treated the legend of Œdipus, in the best of all his productions; while the failure of Corneille and of Voltaire, in their several attempts to extend the combinations and improve the conduct of the plot, is perhaps the most decisive tribute to the ability of the Greek poet in the management of that difficult subject. His general desire to heighten the interest of his fables is shown by the addition he made to the number of actors, who might be simultaneously brought upon the stage; an improvement certainly copied by Æschylus in the latter part of his career. But, besides this technical addition to the facilities of the dramatic art, Sophocles was in other respects an improver on the Æschylean model. The ideal region, in which his imagination loved to expatiate, was different from that of the elder bard; peopled not with supernatural terrors and shapes of colossal magnitude, but with images of perfect majesty, serenity, and beauty. The impress of such lofty and noble contemplations is seen in the almost faultless excellence of his style. It is not wild, unequal, and irregularly grand; but stately, sober, and elaborate. The few sallies which he makes in the manner of Æschylus, fail, as imitations often do, by putting on the external shape without the vivifying spirit of the original. But in these passages the poetry of Sophocles is wandering from its native channel, along which it usually flows, a mild majestic stream, seldom ruffled by the tempest, seldom breaking in upon its limits, but bearing on its aspect the unquestionable symbols of dignity and power.

With the third of the great tragic writers of Athens the decline of the art at once commenced and was consummated. Active and fertile as the genius of Euripides* was, it would perhaps have been vain for him to contend with either of his predecessors on ground already occupied by them; with Æschylus in force and grandeur, or with Sophocles in purity of style, in symmetry of plot, and in the beauty and impressiveness of moral lessons. But Euripides made no such effort. He struck into a new path more in consonance with the depraved taste and degenerate manners of the generation by which he was surrounded. To say that the ideal was totally banished from his works would be false; but the ideal world of his fancy was not one of sublime elevation nor of stately repose; it was full of sickly sentiment and disorderly passion. The standard *above* humanity was discarded; but a standard *beyond* humanity was substituted in its room. In seeking to keep up a tempest of perpetual agitation, to harrow the weaker feelings of our nature, Euripides showed men as they never show themselves; he enhanced voluptuousness and aggravated error. In character, language, costume, and attitude, that Homeric tone of masculine greatness, which had hitherto ennobled the stage, disappeared. With this departed likewise the solemn march and simple evolution of the tragic fable. Their place was supplied by plots perplexed without interest, and fantastic without ingenuity. Nor were these the only faults of the new school. The choric odes, though adorned with poetical graces, were but loosely connected with the business of the scene: the dialogue was disfigured by the quirks of sophistry, and the pomp of rhetorical declamation; qualities which probably contributed to make Euripides so marked an idol of Parisian taste. Hence, notwithstanding the many merits of this writer as a poet; his pathos, his tenderness, his love of nature, his insight into the heart of man; to him must mainly be imputed the ruin of the tragic drama among the Greeks. His very beauties made him a fatal example. He thought too much of himself, and too little of his subject; the play was bad when the poetry was exquisite; his aim was occasional effect, rather than steady and consistent excellence. If his perceptions were keen, his discrimination was not equally acute; he mistook the coarse, or the ludicrous, for the simple; and if he sometimes made little things great, he more frequently made great things little. In the pathetic, his most successful branch of writing, he is often a plagiarist on his own conceptions; in ethics he

* B. C. 495—405.

* B. C. 479—404.

is rarely free from subtlety or petulance; and in philosophy, content to be always a disciple, and devoid of original power, he has repeatedly been made the organ of doctrines, whose folly or mischief he did not understand.

Longinus, who has drawn from the sun a simile to illustrate the differences between the Iliad and the Odyssey, might have discovered a like illustration of the rise and fall of Grecian tragedy. With Æschylus, it is the dawn of a glorious day, rich in gorgeous colouring and bright promise, but still battling against the clouds, and thwarted by the morning haze; with Sophocles, of a mature and steadfast radiance, it glows in the meridian; and with Euripides, its aptest emblem is the setting luminary, beautiful even in decline, and flooding the skies with a softened lustre, but shorn of power and splendour, and soon to be swallowed up in the darkness of night. Into those shades of obscurity it is not necessary to follow the expiring art. Even while the works of their contemporaries or successors still survived, the ancients themselves acknowledged the pre-eminence of the three great poets whose characteristics have been pointed out. It would neither instruct nor amuse the reader to lead him through a dry catalogue of more than a hundred names, here and there associated with a single piece, or a few fragments, which extend beyond the classical era as low as the fourth century after Christ. All the lustre of Greek tragedy vanished with Euripides, and in the latest productions that assumed the title, its very form disappeared.

If it is expedient, when considering the ancient tragedy, to dismiss modern notions of plan and excellence; it is yet more proper to do so when engaged with the subject of the Greek comic drama. The form of that species of poetry, especially in its more early and interesting shape, was very different from the comedy of intrigue which has gained possession of most modern stages. Like tragedy, it arose out of the ebullitions of Bacchanalian festivity. It is probable that Susarion* of Megara first improved the Phallic hymn, a principal portion of the Bacchic ritual, into a farce performed by a chorus, and accompanied by extemporaneous effusions of raillery and sarcasm. But the Syracusan Epicharmus,† the contemporary of Æschylus, did for Grecian comedy that which Æschylus effected in the other department of the drama. He changed the loose interlocutions of the Megarian comedy into regular dialogue; gave to each exhibition an unbroken fable; and softened into ridicule the coarseness of personal invective. His plots were chiefly of a mythological cast, and the elegance of his style was the more remarkable, when contrasted with the rough buffoonery to which it succeeded. Mitigated, however, as the scurrility of his predecessors was in the plays of Epicharmus, accurate criticism will detect, in what tradition has recorded of them, some distinct elements of the Aristophanic comedy. The habit of burlesquing the tragic style and subjects, to which jealousy of their rising fame probably inclined him, was revived in the incessant parodies, in which the Athenian comic writers indulged their humour or their spleen; those political strokes that seasoned the wit of Epicharmus, were a type, though a faint one, of the perpetual battery which the poet of Athens was expected to play upon public affairs and public men; and the invented characters, the fanciful stories, the mixture of seriousness with jocularity, which marked the Sicilian style, are all features to be recognized anew in such productions as the Wasps, the Birds, and the Clouds of Aristophanes.

The chief alteration made by this great writer and his Athenian predecessors on the Syracusan model, was the bringing back, with a loftier aim, but equal or augmented bitterness, the personal satire of the primitive Phallic songs. They thus stamped upon the Old Comedy a deep indelible impression. It was essentially satirical, and sank at once when its essence was withdrawn. Not that its authors were so simple as to baulk their countrymen of that variety, which in the theatre, as everywhere else, was dear to the inhabitants of Attica. Many other ingredients were blended with the predominant one of personal invective. On the slender thread of an inartificial plot were strung together sarcasm, ridicule, poetry, wit, humour, politics, parody, and puns. The old Comedy may want symmetry and order; it may be deficient as a work of art; yet as a rich and ready vehicle for the flights of genius, it was congenial to the taste of Athens, and worthy of the illustrious poet, from whose remains we now learn to understand its nature.

Aristophanes* had so high an idea of his function as a dramatist, and of his own mental powers, that, had regularity of plot, or an ingenious combination of incidents, been required in the structure of the old comedy, he would certainly have attempted it, and if we may judge even from some scenes of his existing plays, with eminent success. But in reviewing his

* B. C. 560. † B. C. 500.

* B. C. 456.—386.

productions as a whole, and as specimens of the system to which they belonged, not only the ancient conception of the comic art, but likewise the character of the Bacchanalian festival must be taken into the account. To the more solemn and exalted species of mental inspiration, tragedy was consecrated; but of that airy and extravagant spirit, that intoxication of the soul, of which Bacchus was equally the patron, the Attic comedy, in its first estate, was at once the triumph and the type. Hence every appearance of forethought and laborious preparation was avoided, and the reins were freely given to the utmost license of fable, sentiment, and expression, which an exuberant fancy could supply. On this principle we easily find a reason for the wildest sallies of buffoonery, and a reason too, if not an excuse, for that grossness of language and allusion, which harmonized with the obscene ensign of the original Phallic ceremonies. But, above all, this principle explains to us the general meagreness or irregularity of the Aristophanic plots. It was impossible often to contend against the humours of the feast. While "laughter holding both his sides" was lord of the ascendant, the poet was ashamed to show himself in earnest. To take anything in earnest was alike foreign to the disposition of his audience. Thus they tolerated the most vehement attacks upon their own faults and follies in a collective capacity; and permitted the comic author to treat their deities, and the religion of the state, with a degree of irreverence, the slightest approach to which, in a writer of tragedy, was visited with severe animadversion. Aristophanes was not behind his brethren in availing himself of some of these professional immunities; yet, wherever, amid the coarseness, the grotesqueness, and the mockery of the old comic vein, the personal character of the man breaks out, we see that it was not merely his boast, but his real wish and aim, to elevate the tone of his art. The graces of his diction no one will seek to gainsay. He wields the idiomatic powers of the Attic form of speech with a skill unrivalled, except, perhaps, in the dialogues of his admirer Plato. Nor should it be forgotten, that he is at least as much a poet, as a satirist, or a buffoon. Snatches of exquisite poetry are perpetually intermingled with the passages of a more robust or vulgar quality, like glimpses of an Elysian distance descried from some rugged or revolting foreground. When we add to this, that the patriotism of Aristophanes was of that sterling ore which shines from its own brightness, without the adventitious gilding of popular professions, we claim for him the crowning merit of a great mind. The last mentioned excellence necessarily involves another that may justly be ascribed to him; a sound consistent view of the philosophy of morals. Even his memorable assault upon Socrates, however erroneous in the choice of an object, or unwarranted in the extent to which it was carried, must be imputed to no other motive. It was wrong to confound Socrates with the sophists of his day; but it was right that the practices and doctrines of the sophists should be exposed and reprobated with exemplary rigour. Yet the precipitance with which the poet identified a wise and virtuous humourist with the intellectual empirics around him, has caused his satire, in this instance alone, to recoil upon himself. In all other instances the attacks of Aristophanes were as just as they were tremendous; a fact greatly to the honour of one whose shafts flew so thick on every side, that he might well have exclaimed, with a celebrated writer of modern times, "What public question have I declined? what villain have I spared?"

Such severe, though wholesome discipline, as that which was exercised by the authors of the old comedy, could coexist with nothing but a state of absolute liberty. When the free spirit of Athens was extinguished, the license of the comic theatre, after languishing through various stages of decline, finally expired. The gradations of the middle comedy, to which some even of the later plays of Aristophanes perhaps belonged, are ill defined; but simultaneously with the overthrow of Athenian independence,* appeared the first distinct specimen of a new species of dramatic poetry, in which the pungent sarcasm, the political heat, and the rampant humour of the Aristophanic muse were exchanged for graceful lessons of morality, accurate delineation of character, and the interest of regular plots. This new kind of comedy was brought to perfection by Menander,† the loss of whose works is imbittered to us by the loud applauses of the ancient critics, and only *half-compensated*, if we believe Julius Cæsar, by the imitations of Terence. Through all the changes and additions, however, of the Latin imitator, we can perceive the nature of the fables adopted by the new comedy, and that it was, as either Greek modes of life or the rigidness of the dramatic canons forced it to be, rather the comedy of manners than of intrigue. The chief charm of Menander seems to have lain in his delicate portraitures of character; in the consummate propriety of his style, still visible in the

* B. C. 335. † B. C. 342—292.

remaining fragments of his plays; and in a profusion of that Attic salt, which, to use an elegant expression of Plutarch's, appeared to have been taken from the very wave out of which the goddess of love and beauty rose.

Thus the poetical glory of Athens, spread over a space of two centuries, and sustained by different forms of the tragic and comic drama, vanishes at last in a few fragments and a name. After Menander there is nothing worthy of commemoration. But during the same period, the other great branch of literature had been cultivated by some of the most powerful minds that adorn the Grecian annals, and that have raised prose composition, in its chief varieties, to a level with the noblest achievements of poetry.

To the earliest Greek chronicles, which prepared the way for regular history, we have already had occasion to allude. Succeeding, as records of past transactions, to the songs of the mythic age, they had about them much of the spirit of poetry, which still lingers in the epic plan, the picturesque descriptions, and the untiring flow and fulness of Herodotus.* These, together with the highest degree of clearness, simplicity, and natural pathos, are the qualities that render the style of this author so perfect a model of historical composition in the eyes of all who are not blinded by false taste, or by attachment to a particular theory. Something, perhaps, of the inexpressible pleasure, with which we dwell upon his pages, is due to the musical forms and idiomatic graces of the Ionic dialect; employed by him though he was himself a Dorian, either in deference to the preceding annalists, whose desultory sketches he improved into an art, or from a deliberate choice, grounded upon its exquisite fitness for the purpose of narration. Even if, in respect of dialect, he was indebted to the example of his predecessors, he left them far behind him both in excellence of method, and in extent and dignity of subject. His was one of those fertile minds whose energies were summoned forth by the prodigious crisis of the Persian war; an event which, though ushered in by a copious introduction, and surrounded by beautiful episodes, yet constitutes the main plot and business of his history. Herodotus has been called the Homer of historical composition; and he deserves to be so named not only from a certain affinity with the style and language of the great poet, but from the unity of his design, and its subservience to the renown of his country. Like Homer, too, though well versed in the knowledge of human nature and the foundations of ethical science, he makes no parade of his own sagacity. He suffers persons and events, delineated with graphic minuteness, to speak for themselves. In this, as in other particulars, he displays a true conception of the historian's office. History is never so enchanting, never so useful, as when it keeps to its native domain.

Every one will wish to believe, though the tradition rests on no very ancient authority, that the public recital by Herodotus of that great work, in its first condition, which for fifty years he continued to enlarge and improve, drew tears of youthful emulation from the eyes of Thucydides.* Yet, if the spirit of rivalry were thus roused within him, he at least took care to strike out a new path, as remote as possible from the track already opened up. In many things his manner of viewing and of treating history was perfectly original. Together with the Attic dialect, which had been only recently adapted to prose composition, but which was suited, by its compact strength and manly tone, to the grave tenor of his subject, he introduced other deviations from the Ionian standard. While in Herodotus we find the simple majesty, the flexibility, the stately evolution and warm colouring of the heroic epos, Thucydides has all the concentrated interest, the depth, and the gloom of tragedy. Greece, no longer buoyant on the tides of patriotism and national triumph, but torn by intestine animosities, the sport of profligate counsels, and about to sink into the gulf of ruin; a great people, in their corruption and decline; and the fall of that Athens, which, in spite of its vices and follies, had been the boast of the best days of freedom; such was the melancholy theme with which he chose to moralize his pages. It was a sombre, but a pregnant subject; full of striking lessons; rich in materials for eloquent description; and worthy of the highest elaboration which art could bestow. Of these capabilities it would be vain to deny that the historian has made admirable use. But in no instance are the defects, that often accompany genius of the first rank, more conspicuous. With all his dramatic power, and vivid representation of separate scenes, Thucydides is not happy in the general arrangement of his topics. His style is darkened by a studied obscurity, that too frequently converts eloquence into the appearance of conceit. Above all, the spirit of philosophizing has infected too large a portion of his work. In the harangues, which he puts into the mouths of his personages, and the reflections which he

* B. C. 484—407.

* B. C. 471—403.

makes upon events, we often detect a metaphysical subtlety, diving too deep for the truth. The example, thus set, has been eminently unfortunate: it has operated more or less upon all subsequent historians, opening a wide door for partiality and prejudice, and changing, in many cases, the art of animated and impressive narrative into that of mere speculation.

In purity of style, and in lightness and clearness of description, Thucydides is surpassed by Xenophon.* One is tempted, therefore, to ask why, in general estimation, Xenophon should be ranked below Thucydides, as well as below the historian of Halicarnassus? It seems that for this inferiority his subjects must be chiefly accountable. They are deficient either in unity and grandeur, or in compass and importance. The conclusion and results of the Peloponnesian war, detailed in his Hellenic Annals, present not so fine a field as the causes and course of that great moral and political revolution which Thucydides traced out in its operation upon all parts of Greece: and the brilliant adventures, portrayed in the Anabasis, though they blend the dignity of truth with the interest of fiction, and may even be connected, by some visible relations, with subsequent events of the highest moment, have of themselves the air of a mere episode in history. But, in addition to this, it cannot be disguised that the masculine energy and weight of Thucydides, as a political reasoner, by no means revive in the parallel passages of Xenophon. Notwithstanding his grace, his perspicuity, and his tenderness, the intellectual achievements of the latter furnish a proof that he who passes, in too ambitious a career, from province to province of literature, must not hope to erect in any the trophies of supreme dominion.

For it is in many different capacities that Xenophon must be viewed, in order to comprehend his whole character; and in all he has associated his name with the art of composition. Not to mention his writings as a statist, an economist, and a sportsman, the works next in value to his historical productions, are those, in which he skims the surface of the Socratic philosophy, and draws a picture of its founder. Thus he forms, in his own person, a link between the literature of Greek history, and the literature of Greek philosophy; a subject far better treated by him where he makes Socrates directly his hero, than where, in the province of historical romance, to which the Cyropædia belongs, he mixes up Grecian tenets as well as Grecian manners with elements of a heterogeneous description.

With the peculiar systems of the various schools, into which the philosophers of Greece were divided, we have here no concern. This sketch can embrace only the prominent characteristics of the few great men, whose genius has given to the speculations of science a place in the most beautiful of all bodies of literature. It has been previously remarked that the first regular seeds of Grecian philosophy lie scattered amid the poetry of Hesiod: and that the poetical medium long continued to be that through which its maxims were conveyed. But many of the most celebrated among the elder sages declined the honours of authorship; a fact, perhaps, not much to be regretted, at least if we are to suppose that their style would not have excelled their doctrines. Look to whatever side we please, if we except a few gleams of truth, and a few gnomic precepts of moral or political sagacity, there is little in what we know of the ancient schools, Ionian, Pythagorean, or Eleatic, to impress us with a high degree of veneration. Everywhere we see them lost in physical theories, that run into materialism, or in visionary metaphysics, that cannot be said "to call for aid on sense." To the instability of their principles the uncertainty of their deductions, and a sort of mental refinement, perfectly compatible with gross corruption of manners, which grew out of their speculative exercises, and gradually cast its sickly hues over the manly lineaments of the old Greek character, must be traced the rise of the Sophists, that dangerous tribe who flocked from many quarters to Athens, about the period of the Peloponnesian war, and whose history powerfully demonstrates, that errors of opinion must end at last in practical mischief. A show of universal knowledge, a dexterous perversion of the dialectical art, and a jingle of antitheses, that sounded like oratory to undiscriminating ears, were the chief weapons of this pestilential race, who were unhappily allowed to poison the sacred sources of education, and whose influence on the acute but fickle minds of the Athenian youth threatened the utter subversion of truth. But the excess of the evil wrought its own cure. The activity, the success, and the ostentation of the Sophists, stung into vigorous antagonism an intellect as subtle as their own, capable of wielding the same arms, but with a more potent energy, and a better aim. Socrates* entered the controversial arena, whereon he was destined to sustain so conspicuous a part, and to work so

* B. C. 443—353

* B. C. 468—389.

complete and glorious a revolution in the Greek philosophy.

While Socrates purified the spirit and corrected the tendency of philosophical researches; while he even laid, by the hands of his disciples, the foundations of systematic speculation; he himself wrote nothing. Yet his colloquial lessons, preserved by that affectionate enthusiasm, which his virtues kindled, and his very eccentricities helped to keep alive, gave birth to the branch of literature, that numbers among its foremost names those of Xenophon and Plato. In the pages of Xenophon we find a lively sketch of the Socratic ethics, and noble views of natural religion, which have almost exhausted that province of argument; but there is a want of depth and of completeness on the more abstruse points of metaphysics, which is somewhat unsatisfactory when compared with the vastness and profundity that distinguish the writings of Plato.* That illustrious man was more earnest and exclusive than his elegant contemporary in his devotion to philosophy. Except in a few trivial attempts to bestow the poetical dress on thoughts that ever teemed with the fine essence of poetry; attempts, from which his own sagacity, or the advice of his great master speedily diverted him; he did not waste his fire on other pursuits. Without being a methodical writer, he had an intellect too discerning and too accurate to leave mental science as vague and undefined as he found it. He shadowed out its chief divisions, and their mutual dependencies; and was a benefactor to philosophy even with regard to *form*. But much more did he benefit philosophy by the light and glory which his genius flung around every topic it embraced, and by the unrivalled fascinations of a style that drained all the treasures of the Grecian tongue. We forgive the infidelity, with which he often distorted or exaggerated the views of Socrates; the mysticism into which he is prone to dream himself away; the folly of some of his political reveries; the perverseness of some of his ethical doctrines; all is forgiven, as we smile or sigh beneath the spells of this mighty wizard. The shape into which he has thrown his productions; that shape of dialogue which, as managed by him, appears so easy and delightful, that it requires the repeated failures of other writers to demonstrate its intrinsic difficulty; afforded room for every grace of composition, from the smartness of dramatic retort, to the flow of copious dissertation; and in Plato every grace is found. His style appears to possess a principle of self-adaptation, by which it responds, with miraculous facility, to each varied mood of sentiment and passion. He is at once a satirist, a rhetorician, a critic, a fabulist, and, when he pleases, a sophist. We follow him with admiration through all his changes; we are charmed with him under all aspects; but most, perhaps, in those introductory or incidental passages of narrative or description, wherein he combines the skill of a consummate artist with the rich and eloquent enthusiasm of a devout lover of the beautiful.

To this vein of mingled fancy and reason; to this Proteus-like pliancy of style; to this profusion of picturesque and glowing imagery; the strongest of all possible contrasts is seen in the works of him, who has exerted, and down to the present hour continues to exert, an influence commensurate with that of Plato upon the whole fabric of philosophy. Were it not that there is somewhat of a kindred spirit in the acuteness and dexterity, with which both wield the weapon of analysis; that there is an agreement in many of their fundamental doctrines, and their abstract principles of taste; and that a sort of filial tenderness perceptibly moderates the tone of the pupil when alluding to his master; it would be impossible to believe that Aristotle * was for twenty years the disciple, and during a large portion of that period the *favourite* disciple of Plato. For, in the method of philosophizing, in the matter and limits assigned to philosophy, and in the proposed end and object of some of its branches, the chief of the Peripatetics places himself in decided opposition to the founder of the Academy. With him commenced that war between *empiricism* and *rationalism*, as they are technically called, which has raged ever since. But in style the difference of the two leaders is perhaps most deeply marked; and certainly not to the advantage of Aristotle. The fair and flowing stream of Plato's eloquence seems to have sunk without effect into the arid texture of his pupil's mind. A contempt of the flowers of diction, a resolute rejection of ornament, are the prominent features of the Aristotelian style. It is so dry as to approach the confines of dulness; so elliptical as frequently to border on the enigmatic. Moreover, it wants the easy command of idiomatic phraseology, the genuine Atticism, with which Plato captivates his readers. We detect in it decided traces of that corruption of the Athenian dialect, which dates from the era of Alexander, and are already called upon to mourn over the decay of the noblest vehicle ever invented for the thoughts of man. Yet Aristotle,

* B. C. 429—347.

* B. C. 384—322.

in spite of all the faults that may be imputed to him, is great even as a writer. Austere and tuneless as his composition is, it is so pregnant with thought, so "instinct with spirit," and sometimes so enlivened by a true feeling of the lofty or the tender, that it seldom fails to rouse the attention or to interest the heart. Nor is he altogether devoid of a certain touch of humour, not transgressing the bounds of philosophic decorum; a mixture of slyness and apparent simplicity; that has a poignant effect when he chooses to display it. Amid his multifarious productions the best specimens of his literary powers are those most universally known; that ethical treatise, which, through a veil of some perplexity and self-contradiction, discloses so many glimpses of truth; that inestimable work on rhetoric, which is still the manual of the art of persuasion; that code of the laws of poetry, which, though but a mutilated fragment, embraces all the principles of just criticism, and the germs of the most popular and brilliant theories that, from time to time, have enriched the philosophy of taste.

Within the compass of the classical age of Greek composition, the literature of philosophy presents no other prominent points. But we have not yet exhausted the glories of that period. Those proud and palmy times gave birth to another kind of intellectual production, which can flourish, in full grandeur, only on soils that are blessed at once with the presence of liberty and of genius.

Greece was the first theatre in the world for oratory; of all Greece, Athens was the most splendid and renowned arena. Yet, notwithstanding the high rewards of eloquence, which the constitution of that state held forth, it was long before eloquence was cultivated, within her bosom, as a regular art. The elder Athenian statesmen, even those most famed for their success in the assemblies of the people, seem to have studied little how to ensure or to heighten the effect of their natural talents. Perhaps the speeches, which the character of ancient history allowed to be intermingled with the narrative, and in which it was the evident aim of some historical writers to display the full force of their political and oratorical abilities, supplied the earliest evidence of the magnificent results attainable by assiduous care and elaborate preparation. Then eloquence arose as an art and a branch of instruction. Schools for the inculcation of its principles were opened at Athens, and no price was thought too high for the lessons of an eminent professor. It cannot be denied that the influence of this methodical training was not always fortunate. Thus, it would have been better for Isocrates, had he never imbibed an affected prettiness and a finical modulation from the example and the rules of Gorgias. But it is equally undeniable that by such scholastic discipline, and by private toils and trials, too arduous and unremitting for modern impatience to undergo, was matured that perfection of style, proof, in its intrinsic strength and beauty, against all changes of manners, times, and circumstances, which still astonishes and awes the mind in the pages of Demosthenes.* Out of the list of Attic orators, the judgment of the Alexandrian critics selected ten as foremost in fame and merit: but posterity has narrowed the number. When we now speak of the triumphs of Greek eloquence, it is not of Lysias, however pure in dialect and transparent in expression; nor of Isocrates, with the unvarying seesaw of his balanced antitheses; nor of Isæus, though skilled in the science of arrangement, and armed with bursts of manly indignation; nor even of Æschines, who is yet so argumentative, so plausible, and so powerful withal, that it is difficult to imagine him prostrated at the feet of a victorious rival; it is not of any, nor of all of these, that we are understood to speak, but of the great luminary that eclipsed every other light, and shines in unapproachable splendour. The striking fact that in Demosthenes we find the only consummate orator that Athens herself ever produced, may impress upon us the extreme difficulty of the art which he practised. Greece can boast an array of five or six illustrious poets, of three great historians, of at least two philosophers who take a high place in literature; but she has only one Demosthenes. This eulogium will not be condemned as extravagant by those who have studied with all the attention, which such works deserve to have bestowed on them, the series of his political speeches; the attacks upon Philip, and defences of his own administration, summed up and carried to the loftiest pitch of conceivable excellence, in the wonderful oration on the crown. For the complete enjoyment of this master-piece of eloquence an essential preparation is the perusal of the great speech of the accuser; that admirable effort, which for a moment seems to raise Æschines almost to the Demosthenean level, and must extort from every one the question, "how could this be answered or evaded?" But a mere glance at the reply of Demosthenes at once explains the defeat of his opponent. What power! what art! what nature! what elaboration! A heathen need not have scrupled

* B. C. 382–322.

to exclaim, that to purchase the glory of this matchless triumph it would have been worth while to live the life of Demosthenes, and to die his death!

When Alexander, after the destruction of Thebes, demanded the surrender of the Athenian orators, he showed at once his hatred of liberty, and his clear perception of the means that had most effectually sustained it. This act was far from inconsistent with the spirit in which, amid the horrors of an exterminating conquest, he had spared the dwelling and the descendants of Pindar. He intended a death-blow to Greek oratory; but he held himself forth as delighted to cherish and reward all less dangerous manifestations of intellect; and the declension of literature, which was one of the most signal results of his ambitious career, was at the same time a severe and a felt retribution for his political crimes. Well might he sigh in vain for a great poet to celebrate his exploits; he, who by his own deeds had trampled out the fires of genius, and polluted the true sources of fancy and natural emotion. We mark with regret, but without surprise, the change that, from the period of his ascendency, began to affect the various developments of the Grecian mind. Eloquence died away in the sickly languor of Oriental affectation. History, seeming to catch its tone from the extravagant projects and romantic adventures of the conqueror, became a tissue of bombast, compliment, and fable. Science, indeed, flourished in many of its branches; for science does not scorn the patronage of despotism, and often requites its munificence by aiding its designs; but all the charms of the art of composition, whose noblest efforts have ever sprung from the impulse of unfettered minds, fled with the extinction of freedom.

The victorious sword of Alexander opened a way, however, for the diffusion of Greek literature over half the globe, and carried a knowledge of its attractions to the very confines of China. But, though it lingered long in different quarters, it was in Egypt that the principal effort was made, after the death of the Macedonian prince, to form a new focus of letters and mental refinement. All influences were brought together, that could contribute to make Alexandria be, what Athens had been, the capital of the intellectual world; all, except the presence of those Muses, who could not be compelled to migrate from the clime of their birth. The liberal dynasty of the Ptolemies encouraged learning and learned men; collected libraries; founded universities; and was repaid by the too frequent produce of such institutions. The new Greek literature was the literature of courtiers and grammarians. Even the Alexandrian poetry the most favourable side on which that literature can be viewed, is the poetry of art and labour, not of nature. Let Apollonius Rhodius * be selected as perhaps the best specimen of the school to which he belonged. Of him we must say that, if epic poetry required no invention, no fire, no enthusiasm, but only a profound acquaintance with mythology, and an elegant and studied diction, he would be a great epic poet; but that, as it is, he is only an epic compiler of traditions, with here and there a touch of tenderness or passion. One pleasing species of poetry, of which only a faint prelude had been heard in elder times, was certainly brought to perfection during the Alexandrian period: but it arose in another country, and was merely allured from its native seat by the patronage of Ptolemy Philadelphus. It may be a question with some, whether the Idyll, the Greek shape of pastoral song, gained or lost by the nearer view of courts and capitals, which royal favour enabled the Sicilian Theocritus † to take: yet as a tablet of human life and manners, the true function, according to its name, of this kind of composition, its province was perhaps rightly so extended as to embrace certain features of civic as well as of rural society. On either field Theocritus is equally at home; but in an especial manner have the force and simplicity of his painting given a warmth and truth to his representations of rustic characters and incidents, that are scarcely to be found in any later pastorals. It required his strength, his sweetness, and his genuine Doric, to confer real interest on the loves and strifes of shepherds and shepherdesses; and the difficulty of succeeding in the treatment of such subjects is signally demonstrated by the care with which those writers, who are generally classed with Theocritus under the head of Bucolic poets, the showy Bion, and the delicate Moschus, have in fact avoided the actual scenes of the pastoral world. But these authors, or at least the latter of them,‡ lived at a time when neatness and smoothness had become the characteristics of Greek poetry, and when its choicest productions were fit only to bloom in an anthology. Symptons of recovered manhood, in a different department of literature, appear at a later period: but, meanwhile, in order to continue our review of the great productions of mind, we must pass to another people, and to the treasures of a sister tongue.

Inferior to Greece in the genius of its inhabit-

* B. C. 200. † B. C. 270. ‡ Moschus, B. C 154.

ants, and perhaps in the intrinsic greatness of the events of which it was the theatre, unquestionably inferior in the fruits of intellectual activity, Italy holds the second place in the classic literature of antiquity. The early state of that country, viewed in its whole extent from north to south, presents nothing to court the eye of the literary observer. In some respects, indeed, the Etrurian name is important and attractive. Etruria could boast of arts, legislation, scientific knowledge, a fanciful mythology, and a form of dramatic spectacle, before the foundations of Rome were laid. But, like the ancient Egyptians, the Etrurians made no progress in composition. Verses of an irregular structure, and as rude in sense as in harmony, appear to have formed the highest limit of their literary achievements. Nor did even the opulent and luxurious Greeks of southern Italy, while they still retained their independence, contribute as much as their Sicilian kinsmen, to the glory of letters in the west. It was only in their fall that they did good service to the cause. All the disgrace of their political humiliation was amply redeemed by the honour of communicating the first impulse towards intellectual refinement to the bosoms of their conquerors. When, in the process of time, Sicily, Macedonia, and Achaia had become Roman provinces, some acquaintance with the language of their new subjects, grew to be a matter almost of necessity to the victorious people: but the first impression made at Rome by the productions of the Grecian muse, and the first effort to create a similar literature must be traced to the earlier conquest of Tarentum.* It was in consequence of that event, that, after five centuries of war, the harp was at last heard above the din of arms, in the destined capital of the world.

From that memorable period, the adroit and versatile talents, which have not failed to distinguish the Greek race in every stage of national decline, began to exercise a powerful influence on the Roman mind. That influence was felt in different departments of education and amusement. The instruction of the Roman youth was committed to the skill and learning of Greek slaves; the substance or spirit of the Greek drama was transferred into the Latin tongue; and somewhat later, but with an effect more deep and permanent, Roman genius and ambition devoted their united energies to the study of Greek rhetoric, which long continued to be the guide and model of those schools, in whose exercises the abilities of Cicero himself were trained. True it is that prejudice or patriotism made some sturdy endeavours to resist this flood of foreign innovation; but taste and curiosity, once excited, were too impetuous to be withstood. The elegant ardour of the Scipios and their followers overcame an opposition commenced by the watchful jealousy of the elder Cato. For more than a century and a half after the Tarentine war we discover symptoms of a legislative effort to counteract the predominance of Greek philosophy and eloquence. But the decrees of senates and the edicts of censors were equally vain. It was written in the fates that the best part of Roman literature should be only successful plagiarism.

One thing tempered the servility of this imitative tendency. In every genuine Latin writer even though not belonging by birth to the capital, we recognize the pride of Roman citizenship. That sentiment breaks out not merely in the works of great statesmen and warriors, who, aspiring to shine in literature as well as in politics, naturally allowed their attempts in the one field to take something of their tone from the high station and authority that pertained to them in the other; but quite as strikingly in the productions of those to whom the literary character was all in all. It is as prominent in Virgil and Horace as in Cicero or Cæsar. If even the language of Rome, in other respects so inferior to that of Greece, has any real advantage over the sister tongue, it lies in that accent of dignity and command which seems inherent in its tones. The austerity of power is not shaded down by those graceful softenings and qualifying adjuncts, so agreeable to the disposition of the most polished Grecian communities. In the Latin forms and syntax we are everywhere conscious of a certain energetic majesty and forcible compression. We hear, as it were, the voice of one who claims to be respected and resolves to be obeyed.

When we regard solely the bright vein of genius that shines through all the plagiarism of the Latin authors, it seems impossible not to wish that they had added to this the charm of originality: but a little consideration of what Italy was, and what she had produced, in remoter times, will convince us that, without some lively external impulse, it was not likely that a literary era should ever have commenced in that country. Ingenious men have indeed discovered, or dreamed that they could discover, a primitive Latin literature of heroic ballads; evolving, by their own fancy, rather than under the guidance of authentic evidence, a series of epic romances out of the ancient history of Rome. But it is

* B. C. 272.

hard to believe that such a literature, if it existed, or if it possessed any features of excellence, could have been utterly swept away by the ravages of the Gauls: and the fact undoubtedly is, that the few poetical remnants of the earlier ages which still survive, verses of a religious or triumphal character, display rudeness unredeemed by traces of a hopeful and exuberant simplicity. They are far inferior to the songs of many savage tribes with which modern enterprise has made us acquainted. Nor is it probable that the coarseness of these Saturnian lays was much improved by the first dramatic attempts which were made at Rome, on the Tuscan or Campanian model.

Suddenly a Greek slave, brought, after the final subjugation of southern Italy, to the capital of Latium, gave the Romans an insight into the real nature of epic and dramatic poetry. Livius Andronicus * translated into Latin verse the Odyssey of Homer. By a version of only one other poem could he have conferred a nobler boon upon a people, now at last awakening to the charms of intellectual cultivation. But perhaps he judged well in his selection. The more elaborate plan and severer graces of the Iliad might not at once have engaged so much general attention as the romantic rambles of Ulysses: whereas the wondrous tale of those immortal wanderings was sure to arouse that appetite which "grows with what it feeds on." Previously to thus laying the foundations of the Roman epos, the same author had introduced upon the stage, hitherto occupied by buffoonery and extemporaneous sarcasm, specimens of the regular drama, translated from Greek tragedy and comedy. That the more grave of these exotic productions never struck a deep root into the soil of Rome, is a fact sufficiently notorious. Nor is it difficult to discover the cause. Precisely as the Odyssey was fitted, by its amusing and often homely narrative, to captivate the affections of a semi-barbarous nation, even before they could appreciate its higher beauties, so the broader attractions of comedy were certain to take precedence of that appeal to the more refined sensibilities of our nature, which is made by the tragic muse. And when taste was finally matured among the admirers of Cicero and Virgil, political causes prevented that resistance to the growing passion of the populace for show and spectacle, which tragedy, under other circumstances, might have effectually offered. But comedy, though her legitimate forms were ultimately forced away by the same rage for gladiatorial combats, and gorgeous pageants, enjoyed a season of triumph which will claim for it especial notice as we proceed to review the successive stages of Roman literature.

The chronological position of Livius, and the striking effects which resulted from his labours, give importance to his name, though the fragments ascribed to his pen are few in number, and of these the most polished are evidently spurious. But the next memorable author may rest his claim to the high title of the *Father of Roman Song* upon something better than mere antiquity. Ennius * not only naturalized, by a work of some extent, hexameter verse in Italy; he not only conveyed into his own tongue the genuine spirit of Homer along with that measure which was most favourable to such a transfusion; but he was, in every sense of the word, a true poet. Of the Greeks he was indeed, to the very letter, a devout imitator; but holding, as he had a fair right to do, the perfect models bequeathed by them steadily before his eyes, and adopting much of their expression as frankly as later Latin writers adopted much of his own, he yet displayed an original, and a Roman spirit, in the choice and treatment of some of his principal subjects. It was thus that he got such possession of the national mind, as to justify a philosopher, posterior by nearly three centuries to himself, in speaking of his countrymen as *an Ennian people*. Something or other, it must be observed, from the hand of Ennius, encountered them in almost every branch of composition. Even in prose the versatility of his powers found scope for exertion. But poetry, throughout its chief varieties, was his favourite field. His poems were by turns epic, tragic, satiric, epigrammatic, and didactic. Perhaps, among them all, to judge by the surviving specimens, we have most reason to regret the loss of those versified chronicles of Rome, whose plan, as the reader instantly perceives, was too naked and simple, but whose defects of arrangement seem to have been compensated by the feeling which dictated the theme, and the vigour with which it was sustained. Here we are still able to detect indications of that which pleases an unsophisticated taste in all early literature; that seizure of minute traits and circumstances, and that graphic manner of portraying them, which charm so much in the poetry of Homer and Chaucer, and would have no less charmed in the poetry of Ennius, had his productions reached us in a state of equal preservation.

We are by no means puzzled to assign a rea-

* B. C. 240.

* B. C. 239—169.

son for the variety observable in the works of this literary patriarch. His access to the manifold stores amassed by Grecian genius had made him intellectually rich, and he was in a hurry to pour out, before the astonished gaze of his contemporaries, a full display of his opulence. But his successors, less actuated by the impatient desire to exhibit a new acquisition, had leisure to pause, to discriminate, and to attach themselves, with a judicious preference, to the kind of composition best suited to their natural powers. Thus, while some attempted tragedy, and some compiled annals, the comic drama, alluring by the prospect of gain as well as by its adaptation to the bent of their minds, was the province on which the most celebrated among the immediate followers of Ennius reaped their laurels. Plautus * and Terence have at least this in common, that they both aimed at immediate popularity, and by cultivating the same branch of the poetical art; but they seem to have availed themselves of almost every facility for differing which the existing scope of comic poetry afforded. The difference between them lies not so much in their choice of a model; since though Plautus to a certain extent followed Epicharmus, he for the most part resorted for his materials, as steadily as Terence himself, to the new comedy of the later Attics; but it lies in the tone and temper of their minds, and in those properties of sentiment and style, which reveal the original qualifications of a dramatist through the most slavish transcription of fable and manners. In reading Plautus we are provoked to wish that one, who was imbued with so large a share of the Aristophanic spirit, in its grosser attributes, had made the old comedy, in all its extent, his exemplar rather than the new, and had thus provided a more proper vent for the coarse humour, the buffoonery, and even the poetry, that were within him. But in Terence, whether or not he equalled the selectest graces of Menander, we find an elegance worthy of Athens in the best of those days when she had learned to substitute a scrupulous refinement for more noble and commanding beauties. Even of Plautus the language is pure and flowing; not, indeed, controlled by much deference to the laws of metrical harmony, but full of pith and sprightliness, bearing the stamp of colloquial vivacity, and suitable to the general briskness of his scenes. Yet we miss all symptoms of deference, in the tone of his dialogue, to the taste of the more polished classes of society. The plan and denouement of his plots are carelessly contrived. Gaiety, surprise, plays on words, puns, low jokes, reprobate manners, caricature, rather than character and true humour, have been aimed at and achieved by Plautus.

Terence is as much above him in regularity and dramatic art, as in elegance and harmony. He laid his plans with more solicitude, and hit the essence of human character with a finer perception. But the charm, the glory of Terence, is his style. He seems to have weighed each particular word in the balance of an unerring judgment. Hence he was, and is, exquisitely delightful to every cultivated mind. As a mere comic writer, his fault lay in pitching his style too high. There was not sufficient breadth and grotesqueness for the appetite of the million. He was deficient in coarse jocularity, and so the people left him, in the midst of some of his best pieces, for the tricks of a rope-dancer! Such was the temper of the Roman populace, who liked to laugh with their mouths wide open, and who, by enforcing a compliance with their sovereign will, produced the ruin of the genuine drama.

We pause, for a moment, at the era of Terence, to mark the rapid improvement of the language spoken and understood in Rome. At the end of five centuries unadorned by literary efforts, it had been rough, unfixed, and inharmonious: at the end of fifty years, since the commencement of its literature, it was graceful in its idioms, settled in its principles, and pleasing to the ear. Sprung from the same Pelasgian source with the Greek, but mixed to a larger extent with barbarous additions, and retarded in its progress by the habits of Italian life, the Latin tongue, when Livius Andronicus wrote, was still a crude and rugged element. With Ennius appeared the first traces of amelioration. Plautus advanced some steps. But Terence outstrode all competitors, and reached the goal. We cannot mention a Latin author who excels him. Yet this boast of Roman letters, this model of composition in the Roman language, was a foreigner and a slave!

It was not until half a century later that true Romans came into the field with a blaze of splendour, that has never forsaken their names. Something, however, had been accomplished by them before the brilliant days of Cicero, Cæsar, and Lucretius. Lucilius * had moulded the careless effusions, half-humorous, half-sarcastic, of the Ennian school, into the first regular form of Roman satire; that form, in which the origi-

* Plautus died, B. C. 184.—Terence, B. C. 195—159.

* B. C. 148—103.

nality of this species of poetry consists, for, with regard to its essence, Lucilius was deeply read in the Greek old comedy and Iambic invectives, and merely clothed the spirit, learned from them, with a new external dress of hexameter verse, his favourite mode of composition. Still earlier, however, and in a different department of letters, we are called upon to distinguish the names of Cato the Censor, and of Fabius Pictor.* Had anything except his agricultural journal descended to us in a state of good preservation, it might have been possible to praise, on other grounds than those of traditionary fame, the nervous style and masculine eloquence of Cato. But in that treatise he writes like a farmer; and of his other productions, nothing but fragments or uncertain reports have survived. Quintus Fabius Pictor is selected, as the most ancient compiler, in prose, of his country's annals; though his improbabilities, absurdities, and inconsistencies, of which one of his successors loudly complains, appear to fix upon him the title of fabulist rather than even of chronicler. Varro,† likewise, whose life was protracted beyond the deaths of the great men, enumerated at the beginning of this paragraph, came into the world before them. He was, among other things, an agriculturist, a grammarian, a critic, a theologian, an historian, a philosopher, a satirist. Of his miscellaneous works considerable portions are extant, sufficient to display his erudition and acuteness, yet in themselves more curious than attractive. When Petrarch hailed him as the third light of Rome, he was moved, no doubt, by that pedantry, which, in the constitution of his mind, was so largely blended with genius. To us the circumstance of main interest, connected with these authors, is the light thrown by their style and subjects upon the rise of Latin literature. We cannot fail to be struck by the early appearance of prose composition; but we at once detect its source in the imitative nature of that literature. Where original genius has to pioneer its own way, some time usually elapses before the natural tendency, produced by many causes, to metrical and rhythmical effusions, subsides into an aptitude for composition in prose: but far more rapid is the progress towards this extension of literary labours, where the chief task and aim of authorship are to copy antecedent models. The choice of subjects is the other remarkable feature of the epoch to which we have alluded. It shows, on the one hand, that fondness of the ancient Italians for rural life, which so long retarded the improvement of their language and the dawn of intellectual refinement; while, on the other hand, the works of Varro alone sufficiently testify that not a century had elapsed from the first appearance of literature at Rome, before men of learning, in the peculiar sense of that appellation, were mingled with her poets and annalists. Of the want of freshness in the Roman literature, this is a striking evidence. It can scarcely be said to have passed through the fair and amiable gradations of infancy and youth. All at once came upon it the lineaments of manhood, and even these were soon darkened and sullied by some shades of incipient decrepitude.

Free, however, from every trace of decay or decline, and exhibiting only the pride and beauty of consummate vigour, are those productions which, better than their deeds on the arena of war and politics, have immortalized Cicero* and Cæsar. The coetaneous existence of these remarkable men, and the close relation in which they stood to each other in public life, would force us to view them together, were there no affinity between them as authors. But, in their case, it is assuredly a bond of literary connexion, that they both display the perfection of Latin prose, and supply the purest repository of diction available for that species of composition. Perhaps, too, though their styles are very differently coloured, both were alike fastidious in the selection of words and arrangement of sentences. The exquisite simplicity of the one might be as much the result of art as the swelling pomp of the other. But their art was applied in separate directions. Cicero, not less than Cæsar, was a practical man: but Cæsar, probably by a continual effort, has communicated to his writings also the practical character. Though he wrote quick, we cannot believe that he wrote carelessly; yet while his taste was ever on the watch, while he never misplaced a word, nor was guilty of an inelegance, he stamped an impression of unaffected earnestness, an air of business, on every thing that dropped from his pen. Cicero permits the artist always to be visible; nay not merely permits, but glories in the revelation of his pains and skill. He wishes to be detected in his work-shop with his tools around him. He is uneasy lest the reader should not esteem him sufficiently elaborate.

Had the orations of Cæsar come down to us in an unmutilated shape, we might have instituted a more full comparison between him and Cicero. For it is chiefly as an orator that Cicero is made the subject of criticism. From the remotest

* M. Porcius Cato, B. C. 234—149. Fabius Pictor, about B.C. 220.

† M. Terentius Varro, B. C. 116—28.

* Cicero, B. C. 106—43. Cæsar, B. C. 100—44.

times eloquence ranked high at Rome, as a personal accomplishment, and a means of obtaining or preserving power: from the date of the first appearance of polite learning, the art of rhetoric began to be sedulously cultivated. It would be easy to crowd a long paragraph with the names of distinguished speakers, who owed to their eminence in this respect the proudest political triumphs. But of their harangues little more is left than of their greatness. On the field of literature Cicero towers alone, to maintain the cause of Latin against Grecian eloquence,—and to demonstrate the inferiority of the one to the other. Various reasons have been assigned for the subordination of Roman oratory when put in contrast with that of the Greeks; but the true causes were inherent and unavoidable. One of these causes lies in the innate difference of the Greek and Latin languages; the Greek, by its forms and idioms, susceptible of vast copiousness, and an unwearied flow of thought, pressing on, through clauses and sentences, in regular progression; the Latin, trained to a more periodic turn of composition, yielding indeed ample room for diffuse expression and imagery, but not chaining thought to thought with the same logical coherence or magnetic impulse and attraction. This discrepance of the two tongues becomes extremely obvious in lyric poetry. It is impossible not to perceive it in comparing Horace with Pindar. And we hold that it prevails hardly less in the higher branches of eloquence: that it would have been impracticable for Cicero to speak in the strain of Demosthenes—with equal closeness, equal energy, and a like impetuosity of passion, feeling, and argument, kindling into fire from their own vehemence, and disdaining all splendour that does not flame out naturally from the subject itself and the most direct mode of treating it. The other great cause of the imperfection of Latin oratory arises from the necessarily artificial nature of all imitation. In Cicero we uniformly see the rhetorician; in Demosthenes we see the man. Demosthenes, such was his skill, seems anxious merely about what he is to say; Cicero, about how he is to say it. He was right in rating high the difficulties of the orator's art; he was either wrong in the method he took to master them, or deficient in power to do so. Partly, perhaps, he was scared by the formidable estimate made by himself of the endowments requisite for success in public speaking. These, as enumerated by Cicero, we may almost compare with the list of accomplishments, which Imlac* demands in the poet; and here, too, we are tempted to exclaim, "enough! thou hast convinced us, that no human being can ever be an orator."

At least, to be a true one, he must not study with too much devotion in the school of Cicero. There is, however, another department of intellectual exertion, in which Cicero may be mentioned as a model, to whose excellence hardly a sufficient tribute has been paid. In philosophy, in the application of original thought to the analysis of mind, and of the moral sense, and to the illustration of their phenomena, his rank is low: but as a philosophic writer he cannot be placed too high. For the exposition of principles imparted by others his genius and style were admirably fitted. Everything conspires to make us regard him, in this capacity, with unalloyed pleasure. His ethical and metaphysical labours were crowded into the close of his active life, and fill up the picture of an amiable character The tumults of ambition, the noise of forensic and senatorial warfare, the anxieties of personal danger, seem forgotten, as he receives and repeats the lessons of Plato.

Contemporary with Cæsar and Cicero was Lucretius,* the most original, and perhaps, in spite of his subject, the most beautiful of the Latin poets. It was with reference to the confident and commanding manner of this noble writer, often rising into a high pitch of scornful indignation, that Dryden ascribed to him a perpetual dictatorship: but the same sort of arbitrary will and power may be perceived in his treatment of the stubborn topics, on which a fond attachment to the Epicurean philosophy induced him to exercise his genius. If in anything his subject controlled him, it was in suggesting, as consonant with its own quaintness and austerity, the use of a diction still overrun, even at that Ciceronian era, with the rust of preceding times. But in how many points did he control his subject!—a subject so extensive indeed, yet, poetically considered, so unpromising as "the nature of things." With what a soul does he animate the abstract doctrines of his Grecian master! With what a bodily grace and presence does he then clothe them, and bring them down into the region of sense, and equip them with a picturesque and brilliant garniture! With what charming episodes he relieves the dulness of didactic matter; and even where the heavy theme appears settling into a "palpable obscure," what quick flashes are thrown out of the deepest gloom! If it be true that Lucretius composed his poem during the lucid intervals of a mental disease,

* See Rasselas.

* B. C. 95—52.

we might infer that somewhat of the inspiration of madness pervades its descriptive passages. In such passages alone, it may be added, is the didactic writer really a poet. Where he unfolds a system, he is merely a versifier; it is where he illustrates and embellishes it, that fancy asserts her empire. As an imaginative portrayer of nature, Lucretius has no superior. Some of his very faults, in relation to a pure standard of morals, arise out of his transcendent powers of description. He sees everything with such intense perspicacity, he paints everything in hues so rich and vivid, that, where his theme is indelicate or voluptuous, this irrepressible faculty produces results that are doubly revolting.

Within the limits of the same period we have to notice the sparkling productions of Catullus and of Sallust.* In the works of both we trace the paramount influence of Greek models. Of itself Roman literature had not reached, at the date of Catullus, that era when it would have been natural for the learned or pathetic elegy, or the smart epigram, to make their appearance. But with a style half-Grecian, and a taste wholly so, it was no wonder that he looked for an example to the poetry of Greece, and finding one province yet uninvaded, imbibed and introduced the spirit of the Alexandrian school. Even into his lyric poetry, and his attempts in heroic metre, he infused partly the pensive feeling of his masters in elegiac verse, and partly the grace and point of epigram. But besides this incongruity, which is unquestionably a fault, Catullus errs by being too confined in his range of thought and subjects. He is too tiny a writer. He never produced anything equal to his genius.

Sallust, in a different department of letters, has some strong symptoms of affinity with this learned poet. Circumstances have even caused, through the loss of the larger portion of his writings, that Sallust should resemble Catullus in the scantiness of his literary remains. But more striking than this accidental similarity is that prematureness of style which, in both, could have arisen out of nothing else than the spirit of imitation. In the ordinary progress of events, Sallust should have followed Livy, instead of preceding him; that is, the deep thinker, full of moral and political wisdom, should have come after the lively, eloquent, and picturesque historian. Not that Sallust is deficient in the power of vivid painting. He could not devoutly study and strive to emulate Thucydides without cultivating that faculty. Still, it is always evident that he is more ambitious of being profound than of displaying any other quality; and, fascinating as his compositions are, it would have been better for his fame had he not so often forced upon the finest passages the mannerism of his Grecian master, and darkened their meaning by the use of antiquated diction.

Virgil, Horace, and Livy* must next be grouped together, not only because they lived in the same age, but likewise as the brightest specimens of that splendid era which derives its name, as it derived much of its character, from the sovereignty of Augustus. In some respects this was the golden time of Latin literature—rendered so, to a great extent by the judicious patronage of the emperor himself, and of those exalted persons who imitated his example. Nor should we be surprised at the signal difference between the effect of Augustan patronage upon the literature of Rome, and that of the patronage of the Ptolemies upon the literature of Greece. The latter was directed to an original literature, already on the decline, whose inspiration had been freedom, and the ambition to excel; the patronage of Augustus and his court was bestowed upon an imitative literature, still aiming at improvement, whose inspiration was taste and the ambition to please. This, too, produced the vast increase of nationality, which became conspicuous in the writings of the Augustan age. Though much of the expression and the ornament of these writings was faithfully copied from the Greeks, yet the subjects were more exclusively Roman or Italian. Their very flattery of existing power gives a national tone to the strains of the poets. Virgil and Horace never suffer us to forget that the master of half the world was master also of Rome and of themselves.

We need say but little of the eclogues of Virgil, the amusements of his youth, in which, with all his love of nature, he is never natural, and with the wish to imitate the Sicilian model he has not ventured distinctly to echo the accents of Theocritus. But, with far different power, and a more true conception of Italian scenery and agricultural life, he has given in the Georgics a specimen of didactic poetry, in which we can regret nothing but the form. The more we study this consummate production, the more wonderful does it seem that it should have been written on command, and to serve a political purpose. But Virgil was here employed upon a theme eminently congenial to his taste and his affections. Here, too, he was more independent, both in the selection and in the treatment of his

* Catullus about B. C. 87. Sallust, B. C. 86—34.

* Virgil, B. C. 70—19. Horace, B. C. 65—8. Livy, B. C. 59—17.

topics, than in any other part of his works. Hesiod was before his eyes only so far that Hesiod had likewise sung of rural scenes and occupations; but Virgil leads us into a new country, filled with new images, and where we feel ourselves under the conduct of a nobler and more eloquent guide. Had the same degree of originality appeared in his epic poem, Virgil might better have supported a comparison, which it is now highly indiscreet in his admirers to institute, with the great minstrel of Greece. But, under existing circumstances, it is wonderful that any one should place the Æneid in competition with the works of Homer. It is deficient in the primary requisite for exciting a strong interest. The character of the hero is a blank; we neither sympathize with his feelings nor care for his success. How different from those prominent and commanding features that rivet our attention to the persons and the adventures of Achilles and the Wanderer of Ithaca! And for the poet's failure in this respect there is an obvious reason. The character of Æneas came not to him conveyed by the hot breath of a living tradition. He drew upon his fancy for the image, and that too under no livelier impulse than the wish to make the Trojan prince an allegory of the emperor Augustus. If such an inspiration was bad, the attempt to unite in one poem the distinct plans and excellencies of the Iliad and Odyssey was equally unfavourable to the structure and management of the plot. It has neither the concentrated dramatic interest of the first, nor the free scope and bewitching variety of the second. The Æneid has striking beauties; but it has not the peculiar charm of the Iliad—it has not the peculiar charm of the Odyssey. Had the wishes of Virgil with respect to its destruction been obeyed, the world would have lost much of splendid expression, dexterous imitation, and graceful imagery, but we are not sure that much fame would have been sacrificed by the author of the Georgics.

Of all the great lights of Latin literature, Horace, though an unblushing plagiary with regard to the Greek originals, stands most alone in relation to his own countrymen. In lyric poetry he is not approached either by Catullus before him, or by Statius after him; in the easy flow of his epistolary verse he has no rival; and in satire, however we may rank his merits in comparison with those of Persius and Juvenal, his vein of liberal sarcasm and elegant philosophy is peculiar to himself. Perhaps the balanced judgment, the avoidance of extremes, so conspicuous in the rest of his writings, may be esteemed the true cause why his lyric efforts, pre-eminent as they are among the productions of the Roman muse, bear little resemblance to the nobler effusions of the Grecian masters. The very circumstances of Roman life, in the cultivated and intellectual classes, divided between political occupations, and the enjoyment of excessive luxury, and in either case adverse to that susceptibility of high and keen emotions which is essential to the development of the lyric faculty, opposed an obstacle to his success. But the temper of his mind increased the difficulties with which Horace had to contend. Where he merely translates the minor poems of Archilochus, Alcman, or Alcæus, or borrows detached thoughts and forms of expression from Pindar, we are pleased with his ingenuity; but, except once or twice on Roman subjects, which seem to have roused the pride of citizenship, we search in vain for the flow and fire of genuine enthusiasm. There is little of Pindaric ecstasy about him. In reading the odes of Horace we figure to ourselves a man of genius, in some delightful retreat, following out the train of sentiments and images that arise in his mind, with great self-complacency and a design to please his patrons or his friends; but there is nothing like the Greek inspiration of a solemn festival, a public triumph, music sounding in the poet's ear, and nations hanging on his lips. In Horace we have point, terseness, and vivacity; in Pindar the glow of a "fine frenzy" and impetuosity hurrying us along in a breathless transport. These authors well display the opposite tendencies of their different languages;—the condensed vigour of the Roman periodic style—the mingled abruptness and diffusiveness of the not more manly, but more genial and enchanting Greek.

Livy is the third great ornament of the Augustan period. In genius he might, perhaps, justly be ranked even above his poetical contemporaries. His originality alone, had he no other merit, seems to entitle him to this pre-eminence; since he struck out for himself a new path, remote at once from the crude and meagre style of Fabius Pictor and his followers, and from the affected mannerism and ambitious philosophy of Sallust. To rebut imputations upon his veracity, his impartiality, or his diligence in collecting facts and collating authorities, is not necessary here. Looking solely to his literary qualifications for writing history, it is impossible to conceive anything superior to his power of animated narrative and picturesque description, or to the freedom and acuteness with which he delineates striking characters as well as important events. The eloquence that yet lingered in his pages was a rich compensation to his own times, and still

more to after times, for the muteness of oratory in the forum and the senate-house.

Forced out of that sphere of exertion, which could not co-exist with Imperial despotism, however mild, Roman intellect now devoted itself, more exclusively than before, to the cultivation of the poetical faculty. Now too, a species of poetry least congenial to the ancient manliness and iron nerves of the Roman character, came to be peculiarly distinguished. To the elegiac verses of Catullus, allusion has already been made; but the plaintive and amorous Tibullus* may more truly be regarded as the leader of this race of poets, the votaries of melancholy and of love. The impress of the Augustan epoch is deeply marked upon their writings, as it was upon their souls. They had ceased to struggle or to wish for liberty, and in their pleasure or their sorrow, they forgot the impulses of nobler sensations. Such is the tone of the Latin elegy, as it flowed from Tibullus. He has sensibility, tenderness, even enthusiasm, but an enthusiasm that dreams itself away in reveries of passionate fondness. His language is beautiful, but it has the feminine beauty of weakness: the rural landscapes, which he delights to draw, breathe an air of languor and repose. There is truth, indeed, in every line of his composition. How could it be otherwise, when he made his poems a chronicle of his life, and wrote from personal experience? This is the secret of that superior originality, when compared with his elegiac rivals, for which he has been so often praised. It is the originality which must arise from the study and the portraiture of self: for in mere mental vigour and ability he was unquestionably surpassed by Propertius.† Had the latter poet trusted more to his own resources, and less to acquired knowledge and foreign models; had he been more Propertius and less Callimachus, more a Roman and less an Alexandrian Greek; he must have gained a high reputation for truth and feeling, instead of that lower fame which attends ingenuity and learning. The erudition, the fruitful fancy, the unexampled fluency and ease, which distinguish Ovid,‡ would not have advanced him, in this case, to a rank above Propertius, since the play of imagination without genuine sentiment, or the monotonous accents of a voluble but solitary grief, too often make up the sum and substance of his elegiac compositions. Ovid, however, has other, and perhaps stronger claims to admiration, as a writer of hexameter verse. His metamorphoses, though the epigrammatic spirit is too prominent in them for a work of that extent, must without question be esteemed a production of great art, wit, and splendour. Pity that the art is frequently displayed at the expense of nature; that false wit is largely mingled with the true; that mere glitter seems to have satisfied the mind of Ovid as much as real brilliancy; and that, notwithstanding all his genius, he contributed, in no small degree, to hasten that decay of taste, which from this date becomes the leading characteristic of Latin literature.

In satirical composition alone, some may be inclined to dispute the fact of this decay. We no longer find, indeed, that intimate knowledge of human nature, that mitigated gall, and that agreeable variety, which adorn the satires of Horace. But no poet has grander conceptions or finer bursts of occasional tenderness, as well as majesty, than the too often depreciated Persius.* He must have ranked higher in general estimation, had he not, with a mind of a very different cast, plodded too closely in the steps of Horace. His own sincere stoicism could not well put on the air of the Horatian worldly philosophy; and his fierce censure of obscure persons and things is not a happy substitute for the delicate irony which Horace caused to play around all that was most prominent and brilliant in society. From such dark allusions, and from the crude metaphors in which Persius frequently conveys them, Juvenal † is almost entirely free; and it may reasonably be made a question whether his powers of indignant invective, his noble declamation, and his poetic fire, do not place him at the head of all the satirists. He is least indebted to Greek models; a true Roman of the purest strain in his subjects, his sentiments, his diction, and his manner.

But with this exception, if it be allowed to be one, the palmy days of Roman literature had now expired. In prose and poetry, the symptoms of its rapid decline are equally manifest, as we pass in review those authors who followed the last years of Augustus. Into the former branch of composition a new and artificial taste was introduced by Seneca,‡ who was not so much a philosopher as a rhetorician, making display of his false eloquence upon philosophical subjects. The elder Pliny,§ in drawing his scientific knowledge from the Greeks, seems to have forgotten that a style of good Latinity would have been the best vehicle for conveying it to his countrymen. His manner of writing is not only laboured, but deformed with barbarous expres-

* B. C. 58. † B. C. 51. ‡ B. C. 43—A. D. 18.

* A. D. 34—62. † A. D. 38—119. ‡ A. D. 2—65.
§ A. D. 23—79.

sions, and words that have no vernacular authority. And though in Tacitus * all the strength of Roman genius rallied for a latest effort, yet even the productions of his great mind are marked by peculiarities unlike the manhood of literature. Mannerism verging close on affectation, and the ambition of being always profound, have weakened the effect which must otherwise have resulted from his energy, his sensibility, his high morality, and his political sagacity. In his works, however, the glories of Latin prose find a more brilliant termination than if we extend the catalogue so as to embrace the panegyric on Trajan by Pliny† the Younger. The very faultlessness of that extolled attempt is faulty. Its modish beauties and finished workmanship too plainly bespeak an age in which the tricks of art were prized above sterling nature and simplicity.

The poetry of the same interval is not less infected with the great vice of exaggeration and bombast. Lucan,‡ for example, affords a memorable instance of desperate exertions to force the sickly produce of artificial heat into rivalry with the fruits of natural genius. There was a relationship of mind as well as of blood between him and his uncle Seneca. Surrounded with servility, and subjected to a tyrant's yoke, he indemnified himself by extravagant pomp of language, and the eulogy of departed freedom, for an abject flattery of existing despotism, which after all proved in vain. Besides this defect, the poet of Pharsalia and the civil wars had likewise to contend with the political nature of his subject. The epic muse delights, indeed, in the shadowy realm of obscure traditional history, but she shrinks from the glare of ascertained and definite truth. A theme of that description compels a transference of poetical power from the management of incidents to the elaboration of diction and the painting of characters. Hence arises an abundance of mere rhetoric, of cold fire, that shines and sparkles with vast vehemence, but communicates no genial glow. The mistake of Lucan has been more than once repeated in later times, and against its depressing influence no energies ever struggled with perfect success.

Thus the decline and fall of Roman literature may be divided into three stages. Towards the close of the reign of Augustus, and during that of Tiberius, all that was great and elevating gradually disappeared. Poetry became a sordid device for attracting the overflowings of court favour; history sank into a hireling panegyrist, eloquence into an aimless exercise of the schools. The debasement of mind was accompanied by debasement of expression. For genuine strength of language empty parade was substituted, and the semblance of sublimity, banished from thought, took refuge in words.

Between Tiberius and the epoch of Vespasian, the most remarkable characteristic of style was an eagerness for tinsel ornament, revealing itself in a rage for antithesis, a passion for tropes and figures, and a forcible introduction of poetical turns and phrases into prose.

The succeeding Cæsars, from Vespasian to the Antonines, generally sought, by liberal encouragement, to revive the vigour of the Roman intellect; but, with all their pains, they could not recall it from the bad direction it had taken. As Tiberius formerly, after the example of Augustus, had established a library, so Vespasian, so even Domitian, and so Trajan made collections of books, which served for little except to adorn the capital. Other efforts were not neglected. Vespasian, avaricious as he was, bestowed salaries on grammarians and rhetoricians: Titus lavished rewards upon orators, poets, and artists: Hadrian founded an athenæum for professors of rhetoric, poetry, and philosophy: Nerva and the Antonines set up schools in the great towns of the empire; and Rome, Milan, and Marseilles were visited by numbers, who wished to cultivate mental endowments. But what did all these means and appliances, what did the emulation roused and the attempts made in other quarters effect? The freedom of speech and writing, which Nerva and Trajan restored, arrested for a season, but could not prevent, the extinction of knowledge and of taste. Even the talents of Tacitus and the younger Pliny did not exempt them from the infection of the times; and after their decease, during the latter half of this third period, the state of polite learning became every day more forlorn and hopeless. The authors became fewer and worse. The writers of prose were poor epitomists, or, if they ventured to be copious, their chief qualities were extravagance, credulity, and folly. The poets, from want of judgment, selected bad subjects, or spoiled every topic by a ridiculous phraseology. Poetry at last died away in the versification of men whose notions of harmony were confined to the computation of syllables, and who thought the nerve and majesty of ancient composition were attained, when they pressed into their own vapid lines the obsolete words of Ennius and Lucilius. In the hundred and eightieth year of the Christian era, when the monster Commodus ascended the throne, he was able by his crimes and cruelties, to outrage and degrade humanity. But Roman

* A. D. 60. † A. D. 62—107. ‡ A. D. 38—65.

literature was beyond the reach of his despotism. It had already expired.

To complete the sketch of literary history in classical times, it is necessary only to notice the after-growth of Grecian literature, long posterior to the Alexandrian epoch, in which some of the raciness of ancient genius seemed to be renewed. Even during the height of Roman ascendency, the Greek intellect had not failed to yield symptoms of life. Thus the historian Polybius,* by the soundness of his judgment, by the proofs he gave of a practised understanding, such as became a statesman and a warrior, by the calm and masculine tone of his narrative, deserved the applause of all cultivated ages and the fame of a great political teacher. It is his style alone that condemns him to a subaltern rank in literature. In it we certainly detect a wide departure from pure atticism, an admixture of Macedonian words and terminations, aggravated by the adoption of forms and inflections from the poets, and of technical phrases from the school of Aristotle. Yet so much was his work admired that, with a few exceptions, it was chosen as the model, both in matter and composition, by subsequent historians. To the acuteness and soundness of the matter, however, the majority of them made no near approach, while they fell even below the level of the style. They displayed more of the subtle diction of the schools, a greater attachment to poetical flowers, and all the vices of a gaudy rhetoric. Of all those who may be classed among the imitators of Polybius, the best writer was Dionysius of Halicarnassus; but it is requisite to pass by the generation in which he flourished, and to glance at the first three centuries after the birth of Christ, in order to recognise the temporary revival of the true Grecian spirit. In poetry, indeed, nothing very excellent appeared; but in biography, satire, history, and criticism, we find ample compensation for this deficiency. Plutarch,† notwithstanding many faults, wrote the lives of great men with a power and liveliness, that shine through all his pedantry, all his far-fetched allusions, and all his incessant attempts at prettiness. Lucian,‡ attic in his taste, and nearly attic in his language, laughs with infinite good humour, and with wit seldom equalled, at the follies of an age which he could not mend. Arrian,§ by the elegance and animation, as well as by the title, of his principal work, invites and almost sustains a comparison with Xenophon himself: and Longinus,‖ the most sublime of systematic critics, though much of his phraseology is marked with the stamp of the third century, throws lustre upon that period by the perspicacity of his intellect, the force of his imagination, and the extent of his learning. His is the last individual name which we need mention in connexion with ancient letters; but, before proceeding to a short review of the middle ages, as an introduction to modern literature, we must notice the chief mental phenomena that distinguish the whole interval between the reign of Hadrian and the death of Theodoric, an event with which antiquity may be said to close.

The first thing that strikes us in the writings, both Greek and Latin, of those ages, is the prevalence of principles and opinions imported from the east. So early as in the time of Plutarch we perceive this tendency to orientalism of thought and manner. His Platonic philosophy takes within its range a considerable portion of eastern and Egyptian doctrine, drawn, it is true, from fountains at which Plato himself had drunk, but shown in a more open and undisguised character. Among other oriental contributions, the treasures of the Mosaic Scriptures, and the facts and precepts of Christianity, now began to exert a mighty influence on the progress of the human mind. Their operation, however, was not unopposed; and there is nothing more remarkable, in the intellectual history of our species, than the violent controversy that was long maintained between the Pagan theories and the poetical spirit of heathenism on the one hand, and the truths and maxims of divine revelation on the other. The contest terminated in the banishment of the Pagan philosophers by the emperor Justinian; but its effects survived in the literature of succeeding times, and can hardly be said to have yet wholly disappeared.

A warfare of antagonist principles, so interesting and important, could not be carried on without calling into action an eager appetite for inquiry and a fine display of original power. But partly from the paramount impression made by oriental models, and partly from the controversial heat which led to a hurried and careless manner of composition, the Greek writings of the period we have specified are unfit to stand the test of a rigorous criticism. The heathen authors, who took a part in the great debate, are confused in arrangement and overladen in diction, and the fire and art of the Christian fathers are obscured by mysticism or injured by an Asiatic pomp and prodigality of phrase. If we look to the west, where the same battle was fought in the Latin language, we shall find the

* B. C. 204—122. † A. D. 49—130. ‡ A. D. 122—200.
§ A. D. 137—161. ‖ A. D. 213—273.

advantage undoubtedly on the side of the Christian polemics; but provincialisms infest and corrupt their style almost as much as their bitterness, their unfairness, and their vanity misbecome the cause for which they wield the pen. During the fourth and fifth centuries this process of the debasement of the Roman tongue went on with great rapidity. The influence of the provincials began what the irruptions of the northern tribes consummated. In many scattered parts of the empire, it is probable that separate Latin dialects arose; and the change upon the whole structure of the tongue could not fail to be prodigious when the Goths poured into Italy, established themselves in the capital, and began to speak and write in a language previously foreign to them. No one can marvel at the distinct traces of this alteration under the sway of Theodoric.* Here we drop the curtain upon ancient literature. Its rising will reveal new scenes, superior in variety, and not inferior in interest and beauty.

* A. D. 493–526.

END OF PART FIRST.

THE

POPULAR ENCYCLOPEDIA;

OR,

CONVERSATIONS LEXICON.

CANAILLE; a French word, signifying the lowest class of people. In the time, however, which immediately preceded the revolution, when the arrogance of the nobility was outrageous, *canaille* signified, with them, all who were not noblemen. The people adopted the word, during the revolution, in contempt of the nobility. In this sense, Napoleon said, at St Helena, that he sprang from the *canaille;* i. e., he did not belong to the feudal aristocracy.

CANAL. A canal, in navigation, is an artificial channel for transportation by water. The first inquiry in the project of such a work, accordingly, relates to the amount of transportation that will be accommodated by the route proposed, at some given rate of tolls (for the quantity will be in some degree influenced by that rate). If the project be a mere speculation, or investment of capital by individuals for the sake of income, its expediency will be determined by the net amount of annual tolls it will probably yield; which ought, in this view of the matter, to be equal to the ordinary rate of interest. But the general utility or public expediency of a project of this sort is not determined wholly by this mode of calculation; for, in this view, we must look at the indirect advantages, such as the increased value of lands on the borders of the canal, the increased profits of other works connected with or affected by the one proposed; as in the case of the smaller branches of internal navigation in England, many of which, as will be seen by referring to the subjoined list, are not very productive investments, but doubtless contribute to the large income of the great lines of transportation between the principal towns, as London and Liverpool, by increasing the amount of goods that pass along those lines. To determine the general public utility of one of these smaller branches, therefore, we must estimate, not only the increased value which it gives to coal mines, stone quarries, forests, &c., on its borders, but also its effects in enhancing the value of other canals. But a work of this sort may be, on the whole, of public utility, although an absolute income, in consequence of the investment, can nowhere be traced, but only a reduction of the cost of some article of general use, by means of a diminution of the labour, the number of days' or hours' work, necessary to furnish the article at any place. Thus the proprietors of the duke of Bridgewater's canal are under obligation to supply the inhabitants of Manchester with coals at the rate of 4*d.* for 140 pounds, which is a great benefit to the inhabitants of that town. This is one of the advantages of this work, which should be taken into the account in estimating its public utility. Another beneficial consequence of any great improvement of this description, as well as those of other kinds, often is to promote some species of arts: for instance, a canal may promote agriculture, horticulture, &c., by irrigation or opening a market. In determining on any canal project, then, as well as in estimating its utility, these various circumstances are to be taken into consideration. The motives, whether of public utility or private emolument, or a union of them both, being sufficient to induce to the undertaking, the next things to be considered are, the obtaining of an adequate supply of water, the particular route to be taken, and the mode of construction. On these subjects, the reader is referred to the treatises more particularly relating to them. The remainder of the present article will be devoted to a general account of some of the most considerable works of this sort. Minuteness of detail and technical accuracy, in regard to the dimensions, &c., cannot be expected in a book of this kind. The length of the canals is probably given with sufficient correctness. The breadth is, in many instances, stated, in the works to which a resort was necessarily had, without distinguishing whether it was that of the bottom or water line, and, in these instances, it has been given as it was found, the reader being left to refer it to one or the other of these dimensions, according to the breadth of the locks, and other facts stated respecting such canals.

Canals of Egypt. Egypt has been celebrated for its canals from the earliest periods of history. The principal are the *canal of Alexandria*, between that city and Rosetta and the Nile; that of *Jessuf*, on the western bank of the Nile, and parallel to it; and that of the *Red sea and Nile*, across the isthmus of Suez. The existence of this last, though a subject heretofore of some discussion, is now established beyond doubt. It was begun by Necho, son of Psammeticus, about 616 B. C., and the work was continued by Darius Hystaspes, but was afterwards abandoned, from fear of inundating a great part of Egypt, which is supposed to be lower than the surface of the Red sea. The work was, however, resumed, and completed near a century afterwards, about 521 years before the Christian era, by Ptolemy II.; but a current from the Red sea upon Egypt was prevented, it seems, by a barrier or bank across the canal; or a part of the route may have been left not excavated. This dam, if narrow, might have been passed by boats on inclined planes, after the Chinese method, or otherwise; but it seems to be more probable, that boats did not pass between the canal and the Red sea, but that the cargoes were carried by land across the in-

tervening barrier, or portion of ground not excavated, and reshipped. Herodotus says this canal was of 4 days' navigation, and wide enough to admit of 4 vessels to pass abreast. Strabo says it was 100 cubits wide, and of sufficient depth for large vessels. The breadth would probably vary very much, as does that of the canal of Alexandria; for if it was made, for any considerable part of the distance, by embanking, instead of excavating, additional breadth might be given without increasing the expense of construction; and, if navigated by sailing vessels, like the canal of Alexandria, the additional breadth would be convenient, though not maintained through the whole route.—The *canal of Jessuf* leaves the Rosetta outlet of the Nile, near Rhameneh, passes a little south of Demanhour (the ancient *Hermopolis parva*), and thence by the northeast shore of the lake Mareotis, to Alexandria. Two branches pass off in a northwest direction, and one in a southwardly, which communicates with the lake Mareotis. This canal is navigated by sailing-vessels, being, in most parts, of a convenient breadth for this purpose, though, at its entrance from the Nile by its new channel, it is only 19½ feet wide. The old entrance, a little north of the new, is not used, on account of the height of the banks, which intercept the wind. Afterwards, at the village of Lemedis, it spreads to the breadth of about 55 yards, and keeps this breadth for 2½ leagues, where the banks are 13 feet above the bottom of the canal, and 10 above the surface of the ground. Passing over two leagues more towards Alexandria to Gabel, the breadth is contracted to 22½ yards. It continues of about this breadth for four leagues, and is very regular. Beyond Leloha, it widens, varying in the first half league from 109 to 273 yards in breadth. Near Beda, it is 55 yards wide, and the banks 23 feet high. Passing on towards Alexandria, the country sinks by degrees, until the bottom of the canal is on a level with the adjacent territory, and then rises above it, the canal being here formed by embankments; but, for a league before arriving at Alexandria, the ground rises again, so that the canal is here formed by an excavation in the ground. It passes very near the lake Aboukir, on the left, in the course we have been following, and is separated from it, near the western extremity of the lake, only by a wall about 20 feet in thickness.

The water must rise 13 feet above the lowest state of the Nile to enter the *Alexandria canal;* and, at high water in the Nile, the water in the canal is about two feet deep on an average. The distance, in a straight line, from Rhameneh to Alexandria, is about 15 leagues, but by the course of the canal, 20. The navigation of this canal continues only about 20 or 25 days in the year, during the highest water of the Nile. The French, when in Egypt, were enabled to navigate this canal for six weeks by clearing away about 18 inches of mud near Rhameneh, at the eastern extremity. This canal, which now passes through ruins and deserts, and is navigable for only a few days of the year, was, as late as the 14th century, bordered by a wealthy and populous territory, and, in the time of the Roman and Greek empires, was the channel of an extensive transportation.

Canals of China. The Chinese seem to have a more extensive inland canal navigation than any other nation, if not greater than that of all other nations. The general course of the rivers is from west to east, the principal of which are the Yang-tse, or Kiang-keo, to the south, the course of which is said to be 2000 miles, and its breadth 2½ miles at a distance of 100 miles from its mouth; and the Yellow river, to the northward, which is represented to be still longer. These two rivers run into the sea, within 100 miles of each other, though they are more than 1000 miles apart in the interior of the country. The artificial channels of navigation pass in a northerly and southerly direction across the territory lying between the natural streams, thus making lines of communication between these principal rivers and their various branches, which form the natural channels of transportation in the easterly and westerly direction. As these canals pass over the summits of the intermediate territories between the great streams, the different parts of the canals must be upon different levels, and there must, accordingly, be some means for boats to pass from one level to another, which they do mostly by means of inclined planes and rollers, over which they are drawn by men. The ascent and descent, at some of these planes, is 15 feet. The banks of the canals are, in many instances, lined with freestone, and contain sluices to let the water off for irrigating the country and supplying the towns; and in many parts, also, they are beautifully ornamented with trees. The barque in which Le Compte passed from Nimpo on a canal was 70 feet long and 16 feet broad. The management, repairs, and extension of the canals is a very important branch of the internal economy of the empire, and the description and history of these works is said to occupy 40 volumes; which does not, however, give us a very definite idea of the extent of these records, as we are not told the size of these volumes. Some of the most extensive of these works have been in operation about 2000 years, having been completed 80 years before the Christian era; and, about A. D. 605, it is said there were completed in the empire 1600 leagues of canal. The *Imperial canal*, and the continuation of the line of transportation between Pekin and Canton, of which that forms a part, is most frequently spoken of, though the distance of the whole route is variously stated. Malte-Brun, in his geography, states it at 1660 miles, but it is stated by others at 920. The navigation over this route occupies about three months. The part of this line called the *Imperial canal* is said to be about 500 miles in length from the vicinity of Pekin to the Yellow river, which it meets about 25 leagues from the sea, where the river is about a mile wide and 9 or 10 feet deep. This canal is called the *Imperial*, from its being navigated only by the emperor's boats, which Le Compte estimates at 1000, of 100 tons burthen each. Between the Yellow river and Canton, the navigation is interrupted, for about 30 miles, by a mountainous district, causing a portage of that distance.

Canals of Italy. In ancient Italy, besides the *canal of the Pontine marshes*, intended as a drain, and used also for navigation, the region about the mouths of the Po was intersected by the *fossa Augusti*, *fossa Philistina*, and numerous other canals. It was in Italy that the great improvement, in modern canals, over the ancient and those of China, was first introduced, in 1481, by the construction of locks and sluices to pass boats from one level to another. It was the invention of two engineers of Viterbo, brothers, whose names have not been handed down. This improvement was soon after adopted in the Milanese territory, under the direction of Leonardo da Vinci, the famous painter, who was also celebrated as an engineer. Inland navigation became so important, that the Italian governments paid great attention to it, and enacted many regulations on the subject, and numerous treatises were published on the construction of locks and the art of making and managing canals. The following are some of the principal canals of modern Italy. The *Naviglic Grande*, between Milan and the river Tesino, 15 miles in length, 130 French feet broad at the surface, and 46 at the bottom. It was extended to Milan in

1257, and enlarged, in 1269, with a branch of about 11 miles in length, from Abiato southward. The *Martesena canal* branches off from the right bank of the Adda, near Concessa (ancient *Trizzo*); is 24 miles in length and 33 feet in breadth, and is raised, in some places, by walls and embankments, 110 feet above the level of the river. In 1497, 5 locks were introduced into this canal. The *great canal of Tesino* terminates at Milan. The *Muzza canal* is drawn also from the river Adda, near Cassano, and re-enters the river at Castiglione, 40 miles distant.—In *Piedmont* are the *Naviglio d'Inéa*, 38 miles in length, uniting the Dora Baltea and the Sessia, with a branch of 13 miles, to the Gardena river; and a canal of 27 miles from Dora Baltea, a little above the falls of the Po, which, passing Trino, unites with the Po 4 miles below Casal. These 2 canals are parallel to the Po, and substitutes for it. There are 3 other short canals in this territory. In the *duchy of Mantua* is the *fossa Puzzola*, 15 miles in length, from the Mincio to the Tartaro, and the *canal of St George*, 7 miles long, branching to the lake of Mantua; also the *Montanaro*, 8 miles from the same lake to the Po, at Borgo Fute; the *fossa Maestra*, 5 miles from Ozoma to the *canal Montanaro*; and the *Fossero*, from the Mincio, 7 miles. In the *duchy of Modena* is a canal 16 miles in length, from Secchia by Modena to Panaro, which has several branches, one 5 miles long. In the *papal territory* is the *fossa Rangone*, parallel to the Panaro, from which a branch passes off by Conte to Po Mort or Po di Jerana, and the *canal Di Giovanni Niginales*, 22 miles long. From Bologna to Ferrara is the *canal di Naviglio*, 24 miles long, and terminating in the great marshes. There are, besides, many short branches of the canals, already mentioned, as well as locks and channels for passing rapids in the navigable rivers.

Canals of Russia. The canals of Russia began with Peter the Great, who had observed their useful effects in Holland. He commenced three. The *canal of Ladoga*, begun by him A. D. 1718, and finished by the empress Anne, is 67½ miles long, from the Volk to the Neva, 70 feet broad, and the water 7 feet deep in summer, and 10 in winter.—The *canal of Vishnei-Volosholk*, completed under Peter the Great, but much improved, afterwards, by Catharine, forms a communication, by water, between Astracan and Petersburg, or between the Caspian and the Baltic, which is effected, as will be seen by referring to the map, by passing from the Caspian up the Wolga, then turning into the river Ivertza; leaving which, the canal passes over to the river Schlina, which flows towards the Baltic into the lake Martina, from which flows the river Mista, which, after a course of 234 miles, discharges itself into lake Ilmen, from which issues the Volk, that runs 130 miles, and empties into the lake Ladoga, which again gives rise to the Neva, that discharges itself into the Baltic at Petersburg; so that these three rivers are, in fact, the same stream, passing through three lakes in its course. It is said that 3845 barques have passed through this canal in one year. There are many other canals in Russia, which we have not space to describe. The canals and rivers supply the channels of a very extensive inland navigation in Russia; so that goods may be transported, by rivers and canals, from the frontiers of China to Petersburg, a distance of 4472 miles; and the line of navigation from Astracan to that capital is 1434 miles.

Canals of Sweden. Canals were early opened in Sweden, and the improvement of the inland navigation has always been a subject of great interest to the government. Among the modern canals of this country is that of *Stromsholm* 60 miles long, the descent 336 feet, the number of locks 25, breadth 18 feet, and depth 4 feet 4 inches. The *Kindac canal* and the *Gotha canal*, intended to open a communication between the lake Wenner and the Baltic, have been commenced under the superintendence of that eminent engineer Mr Telford. The *canal of Trolhatta* makes a navigable channel round the rapids of Trolhatta, in the river Gotha, consisting of successive cascades, one of 60 feet in height, and, in all, 114 feet, and situated N.E. of Gothenburg, about 45 miles. The project of constructing works, by which to pass these rapids, was long contemplated, and finally accomplished in 1800. These rapids interrupted the navigation of the Gotha for about two miles; and the difficulty of making a canal past them was owing to the banks being bold and rocky, as is usual at falls of such extent. They are now passed by nine locks, mostly excavated out of solid rock. This is considered a gigantic work, and was executed by a private company, to their own emolument, as well as the public benefit.

Canals of Denmark. The principal canal in this country is that of *Keil*, which commences about 3 miles north of Keil, and passes 20½ miles across the duchy of Holstein to the river Eydar, which, running by Rendsburg, falls into the German ocean at Jonningen. The Keil canal thus opens a communication between the two seas. It was begun in 1777, and completed in 1785; is 100 feet broad at the top, 57 at the bottom, and the least depth of water is 10 feet. The descent from the summit towards the Baltic is 25½ feet, and towards the German ocean 23 feet. It has 6 locks.

Canals of Holland. This country, it is well known, is intersected, in all directions, by canals, which serve for navigation in summer, and roads of ice in winter. The surface of the water, in many of these canals, is above that of the surrounding country; the lands of which are drained by pumping the water up into the canals; for which purpose numerous windmills are scattered about the country, and kept in operation. For the great ship canal from Amsterdam to Niewe Diep, see *Amsterdam.*

Canals of Germany. The improvement of inland navigation in Germany has been obstructed by the division of the territory into numerous small jurisdictions, which are, in many respects, independent of each other. The canal between *Vienna* and *Neustadt* is 40 miles in length; and that of *Francis*, completed in 1802, between the Danube and Jeysse, is of the same length, and has 3 locks. In Prussia are the *canals of Stecknitz*, *Planer*, *Potsdam*, *Finow*, *Muhlrose*, *Frederic William*, and the *Bromberg*. This last was constructed under Frederic the Great, by the engineer Breekenhaaff. It is 16 miles in length, has a descent of 67 feet, and 9 locks. See *Fossa Carolina.*

Canals of Spain. Spain has done almost nothing towards improving its internal navigation. Some canals have been projected, but only a part of the *Arragon canal* has been completed, consisting of two pieces of canal, both commencing at Navarre. Though this partial execution of the projected navigation has had a sensible effect in promoting the populousness, fertility, and wealth of the neighbouring territory, the work stands still; and there seems to be little prospect of the completion of the project.

Canals of France. The canals of France, next to those of Great Britain, are the most important in Europe, in respect to their extent and the difficulties overcome in their construction. The whole length of canal navigation in France is about 900 miles, or about one third part of that of Great Britian. *Canal of Briare.* The first important work of this kind, constructed in France, was the canal of Briare, called,

also, that of the *Loire and Seine*, because its object was to connect those two rivers. It was 37 years in execution, being begun in 1605, during the reign of Henry IV., and completed in 1642. It is 34½ miles in length. From the Loire, about a mile from Briare, it ascends along the river Frezee, by Ouzonne and Rogny, where are 7 locks; then by Chatillon and Montargis, and, near Cepay, meets the river Loing, which falls into the Seine. The locks of this canal, 40 or 42 in number, were the first executed in France. They vary from 124 to 164½ feet in length, and from 5 feet 4 inches to more than 13 feet in lift, and are, according to some authorities, 14 feet 5 inches, or, according to others, $15\frac{15}{100}$ feet, in breadth. The bottom of the canal is $25\frac{55}{100}$ wide. It is supplied with water principally by lakes; one of the feeders, that of Privé, is 12 miles in length. The cost of this canal is estimated at 20,000,000 francs, or about 3,700,000 dollars, which, considering the difference in the value of money, is nearly equal to that of the Erie canal of New York. It is important for the supply of provisions to Paris. The *canal du Midi*, or *Languedoc canal*, makes a communication between the Mediterranean at the city of Cette, and the Atlantic ocean at the mouth of the Garonne, passing through the province of Languedoc, and is supplied by the rivers Garonne and Gironde, and their tributaries. It was undertaken in 1664, 22 years after that of Briare was completed, and finished in 1680; being 148 English miles in length, from the coast of the Mediterranean to Toulouse, where it meets the Garonne; 64 feet wide at the surface of the water, and 34 or 35 feet at the bottom; rising, at the summit, 200 metres, or about 640 feet above tide-water, and having 114 locks, varying in lift from 4 to 12 feet, and navigated by boats 85 feet long, and from 17 to 19 broad, drawing 5 feet 4 inches of water, and of 100 tons burden. The reservoir of St Ferrol is situated at the summit-level, where a body of water more than five French leagues in length, is accumulated, for the supply of the canal, from the streams falling from the neighbouring mountains. This reservoir and the basins at Castelnaudary cover 595 acres. The canal passes under a mountain at Beziers, by a tunnel of 720 feet in length, lined throughout with freestone—a kind of construction novel at the time when the canal was made, though now common. The canal is crossed by 92 road-bridges, and has 55 aqueduct bridges. It was completed under Louis XIV., under the direction of François Andreossi, as engineer. It is estimated to have cost 33,000,000 francs, or about 6,160,000 dollars; in comparing which with the cost of similar works in Great Britain and the United States, allowance must, as above suggested, be made for the difference in the value of money, the same nominal cost, in France, being a much greater actual cost, in this comparison. The *canal of Orleans* was the next in order of time, having been begun in 1675, and completed in 1692, 12 years after that of Languedoc. It branches from the Loire, near to Orleans, 36 miles below the place where the canal of Briare meets that river, and joins the canal of Briare at Montargis, being 45 miles long. One object of its construction was to save the difficult navigation on the Loire, between Orleans and the junction of the canal of Briare with that river, and to open a shorter route of communication between the Lower Loire and Paris. It has 28 locks, varying from 136½ to 177½ feet in length, and of lifts from 5 feet 4 inches to 12 feet 7 inches. From the Loire to the summit, the ascent is 98 feet 2 inches. The breadth is from 25 feet 7 inches to 32 feet, at the surface of the water, and the depth from 4½ feet, when full, to 2 feet, when lowest. The boats are from 96 to 102 feet long, and 13 feet 10 inches broad. The expense of its construction is stated at 8,000,000 francs, or about 1,500,000, dollars. The *canal of Loing* is a continuation of the navigation of that of Orleans, and the northern part of that of Briare, commencing from the northern extremity of that of Briare, and extending to the river Seine terminating in the neighbourhood of Fontainebleau. It was completed in 1723, is 33 miles long, 44 feet broad at the surface, 34 at the bottom, and from 4 to 5 feet deep. The towing path, on each side, is 6 feet 5 inches broad, outside of which, on each side, is an embankment, like the *levées* on the Mississippi, or the dykes of Holland, 3 feet high, 19 feet broad at the base, and 12 feet 9 inches at the top, to prevent the waters from overflowing during floods. The whole descent is 136 feet 8 inches, divided among 21 locks, which vary in lift from 4 to 7 feet, and in breadth from 15½ to 16. The cost is stated at 2,500,000 francs, or about 466,000 dollars. It was constructed about the same time with the canal of Orleans. The *canal of the centre*, called, also, that of *Charolois*, and likewise a branch of the "Grand Navigation," completed in 1791, leaves the Loire at Dijon, follows the banks of the Arran, then the left bank of the Bourbonne, and passes by Parce, Genelard, Aire, and Blauzey, to the lakes of Monschamin and Long-pendu, which form the summit-level, the rise being 240 feet, by 30 locks, in 6300 metres. The summit-level is a distance of 3940 metres, whence the canal descends, by the river Dheune, to St Julian, where it crosses that river, and passes along the right bank by St Benain, St Leger and St Gilles to Chagny, leaves the valley of the Dheune, and crosses towards the river Halia, which it follows to its junction with the Saone at Chalons, the descent from the summit being 400 feet by 50 locks, in a distance of 47,000 metres; the whole length of the canal being about 71 miles, the breadth at the surface of the water, 48 feet, at the bottom 30 feet, the depth of the water 5¾ feet, the length of each lock 100 feet, and its breadth 16. The cost of this canal is stated at 11,000,000 francs, or about 2,060,000. The *canal of St Quintin* unites the Scheldt with the canal of Flanders. It was projected, in 1727, by the military engineer Devieq, but not constructed until 1810. The original plan, which has been very nearly followed, was to proceed from Maquincourt, near the Scheldt, to mount St Martin, there pass through a tunnel 3440 toises, or a little more than 3¾ miles long; then follow the valley of Bellinglise and Haut Court to the heights of Tronquoy; there pass through a tunnel 700 toises, a little more than ¾ of a mile in length, coming out at Ledin; making the distance of the summit-level 7090 toises, or a little over 8 miles, of which 2950 are open, and 4140, or more than 4½ miles, subterraneous. The length of this canal is 28 miles; in the rise from St Quintin to the summit-level, there are 5 locks, and in the descent to Cambray, 17. The cost is stated at 12,000,000 francs. Besides the above canals, 42 others are enumerated in the *Encyclopédie Moderne*, as completed, or in the course of construction, in France.

Canals of Great Britain. The English were a century after the French in commencing the construction of canals upon a large scale. The first considerable work of this description was the *Sankey canal*, for which an act of parliament was passed in 1755; the object of the act being the improvement of the navigation of Sankey brook; which plan was afterwards changed to that of a separate canal of 12 miles in length. While the work on this canal was in progress in 1758, the duke of Bridgewater obtained an act of parliament for making Worsley brook navigable from Worsley mill to the river Irwell, for the purpose of facilitating the transportation of coals

from his estate to Manchester; but, seeing the advantages of still-water navigation over that of a river, he conceived the project of a canal over dry land, passing the river Irwell by an aqueduct, and thus making a communication between his coal-mines and the town of Manchester on one level. The plan was subsequently extended, and the duke, who lived 14 years after the commencement of the execution of his project (he died in 1772, at the age of 56,) devoted his time and his fortune to the execution of his great work, with the assistance of an engineer distinguished for his genius. He diverted all his resources into this channel, and, to enlarge his means for the undertaking, he limited his personal expenses to £400 a-year, and is even supposed to have shortened his life in consequence of the toils and anxiety attendant upon so arduous an enterprise. It was a grand project, worthy of the sacrifices he made to it. And it is a stupendous monument, whereby his memory is associated with the wealth and prosperity of England. The works were projected by the celebrated engineer James Brindley, and executed under his direction, and constitute a lasting memorial of his genius and skill.

The following are the principal Canals in Great Britain. (ORIGINALLY *denotes the first assumed cost per share, where the actual cost is not ascertained.*)

Name.	When made.	Length in miles.	Ascent & Descent in feet and decimal parts. Total.	Pr. mile.	Breadth.	Depth.	
Aberdare,.....	1793	7½	40	5·5			From Glamorganshire to Abernant. Length of the boats 12 feet, breadth, 5. Number of shares, 221; originally £100; value in 1824, £25.
Aberdeenshire, ...	1805	19	170	8·8	23	3¾	From Aberdeen harbour to Don river, at Inverury bridge.
Andover,.....	1790	22½	177	7·8			From Southampton water to Andover; has been partially abandoned. Number of shares, 350; originally, £100; value in 1824, £5.
Ashby-de-la-Zouch,	1805	40¼	224	5·6			From the Coventry canal, at Marston bridge, to an iron railway, 3½ miles long, at Ticknall. The first 30 miles are level, forming, with the Coventry and Oxford canal, a level of 73 miles, without including the branches. It has tunnels at Ashby-de-la-Zouch and Snareton (the length of the two is 700 yards), and an iron railway, 6 miles in length, to the Cloudshill mines. It has 2 aqueduct bridges. At Boothorpe, a steam-engine is erected, to convey the water to a feeder for the summit-level. Number of shares, 1482: cost, £113; price in 1831, £80.
Ashton-under-line, or Manchester and Oldham, and branches,	1797	18	152	8·4	33—15	5	From Rochdale canal, at Manchester, to Huddersfield, at Duckenfield; has 3 aqueduct bridges; boats of 25 tons burden. Number of shares, 1760; average cost, £113; price £100.
Barnsley & branches,	1799	18	120	6·7			From river Calder, below Wakefield, to Barnby bridge; has an aqueduct bridge and 20 locks. Number of shares, 720; cost, £160; price in 1831, £220.
Basingstoke, ...	1790	37	195	5·3			From Wye to Basingstoke; has 72 bridges and 29 locks. Number of shares, 1260; cost, £100; price in 1831, £5. The Tingis branch is 5½ miles in length. The boats are of 45 tons burden. It has a tunnel of ⅓ of a mile.
Birmingham, ...	1772	22½	204	9·07	40	4½	Commences in the Birmingham and Staffordshire canal, and terminates in the Birmingham and Fazeley canal. The boats are 70 feet long and 7 wide, and of 22 tons burden. Number of shares, 4000; originally £140; price in 1824, £315. The tonnage is not to exceed 1d. per mile.
Birmingham and Fazeley, ...	1790	16½	248	15	30	4½	From the Coventry canal, at Whittington brook, to Birmingham canal, at Farmer's Bridge: has 44 locks; boats 22 tons burden. Number of shares, 1005; amount of share, £150.
Brecknock and Abergavenny,	1776	33	68	2			From the Monmouthshire canal to Brecon. There is, at Abergavenny, an iron railway a mile in length; at Wain Dew another 4¾ miles, and at Llangroiney another 1¼ mile. It has a tunnel of 220 yards, and 3 aqueduct bridges. Number of shares, 1005; originally, £150; price in 1831, £105.
Bridgewater,.....	1758	40	83	2	52	5	From the tide-way of the Mersey, at Runcorn Gap, and at Longford bridge divides into 2 branches, one terminating at Manchester, the other at Pennington, near the town of Leigh. The whole lockage is the 83 feet at the Mersey, in rising from tide-water, by 10 locks. This canal, with a part of the Trent and Mersey canal connected with it, makes a level of 70 miles, 30 of which are on this canal. Mr Cary states that there are about 16 miles of canal under ground within the mountains at Worsley. It has 3 principal aqueduct bridges, and several smaller ones. Arched branches pass off from it at considerable distances, under the town of Manchester, from one of which coals are hoisted up to supply the inhabitants, which the proprietors, successors to the duke of Bridgewater, are bound to furnish them at 4d. for 140 lbs.—an advantage to which much of the prosperity of that town has been attributed. The embankment over Stratford meadows is 900 yards long, 17 feet high, and 112 feet wide at the base; that at Barton bridge is 200 yards long and 40 feet high. The tonnage is 2s. 6d. Number of shares 600; amount £100; price £55.
Bristol and Taunton,		41					From Taunton bridge to the mouth of the Avon, below Bristol. The operations on this canal were at a stand in 1824.
Borrowstonness,....	1790	7					From Ancholme to Calstor.
Caistor, ...	1793	9					A branch of the Grand Trunk canal, terminating at Uttoxeter.
Caldon & Uttoxeter,		28	136	4·8			
Caledonian,.....	1822	21⅝	190.5	8·6	40 bot.	20	This stupendous canal passes through a chain of lakes, or *locks*, and narrow arms of the sea: and, by making 21⅝ miles of canal, and deepening the beds of the rivers Lochy and Oich, and dredging to deepen a part of Loch Ness (In the whole a distance of 4¼ miles, making the total length of excavation 25 miles, with a lockage, up and down, of 190 feet), an interior navigation of 250 miles is opened across the central part of Scotland, from the Murray Firth, on the eastern coast, to Cantyre, on the western, and about opposite to the northern coast of Ireland; being one half of the distance of the navigation between the same extreme points, round the northern coast by the Orkneys. It has 27 locks, including the tide-locks, one of them 170, but most, if not all, the others 180 feet long, and all 40 feet wide; thus opening a ship-navigation through the midst of the country, rising, at the summit-level, 94 feet above the tide-water of the eastern coast, and 96½ feet above that of the western, showing the ocean to be 2½ feet higher on the eastern. At fort Augustus, where it leaves Loch Ness in a north-westerly direction, this canal is cut through

Name.	When made.	Length in miles.	Ascent & Descent in feet and decimal parts. Total.	Pr. mile.	Breadth.	Depth.
Cardiff, or Glamorganshire,	1775	25	600	24		
Chester,	1775	17½	170	9·7		
Chesterfield,	1776	46	380	8·2		
Coventry,	1790	27	96	3·6		
Crinan,	1805	9	117	13		
Cromford,	1794	18	80	4·4	26	
Croydon,	1801	9½	150	15·8		
Dearne and Dove,	1804	9½	125	6·6		
Derby,	1794	9	78	8·6	44—24	4
Dorset & Somerset,	1803	42				
Dublin & Shannon,	1776	65½				
Lawton branch,		21				
Miltoun branch,		7				
Bog of Allen branch,		3				
Edenderry branch,		1				
Kildare branch,		6				
Dudley,	1776	10½	35	3·3		5
Stourbridge brauch,		2				
Dudley branch,		1½				
Edinburgh & Glasgow, or Union,	1818					

the glacis of the fortification, thus adding to the military defences as well as to the appearance of the fort, which, with the five locks of masonry rising behind, presents a grand combination of civil and military engineering amid romantic mountain scenery. From Loch Ness, passing in the westwardly direction of the canal to Loch Oich, 1¼ mile, the land is 20 feet above the water line, which, with the depth of water in the canal, makes an excavation, in this distance, of 40 feet in depth, with a bottom of 40 feet in breadth. To save rock-cutting, in descending, in the westwardly direction, as before, from Loch Oich to Loch Lochy, the natural difference of the surfaces of the two lakes being 22 feet, the whole area of Loch Lochy, which is 10 miles in length and 1 in breadth, is raised 12 feet. In the last 2 miles, before the canal, in its westerly direction, enters Loch Eil, there is a descent of 64 feet, which is passed by 8 connected locks, each 180 feet long by 40 in breadth. These locks are founded on inverted arches, exhibiting a solid and continuous mass of masonry 500 yards in length and 20 yards wide, in which, as late as 1824, and 5 years after its construction, no flaw had been discovered. The gates are of cast-iron. This system of locks has received the fanciful appellation of *Neptune's Staircase*; and the appearance of large vessels, with their masts and rigging, descending these stupendous locks, from the hill towards Loch Eil, is most majestic and imposing, exhibiting a striking instance of the triumph of art. In the distance of 8 miles, from Loch Lochy to tide-water in Loch Eil, the canal, in passing along the north-westerly bank of the river Lochy, crosses, by aqueduct bridges, 3 large streams and 23 smaller ones. Since the construction of this canal, upwards of a million of forest-trees have been planted along its borders. The cost of this great national work was, for

Management and travelling expenses,	£29,000
Timber,	68,600
Machinery, cast-iron work, &c.	121,600
Quarries and Masonry,	195,800
Shipping,	11,000
Labour and workmanship,	418,000
Houses and buildings,	4,600
Purchase and damage of land,	47,900
Horse labour,	3,000
Road-making,	4,000
Incidental expenses,	2,000
	£905,300
Add, to complete the dredging,	7,200
	£912,500

Assuming the number of miles operated upon to be 25, the canal cost £36,500 per mile. It was constructed under the direction of Thomas Telford, Esq. As yet it has turned out an unprofitable speculation. During the year 1829, the total revenue of the canal, arising from tonnage dues and all other sources, amounted to only £2,575, while the ordinary expenditure, during the same year, amounted to £4,573.

From a sea-basin on the Severn, near Cardiff, to Merthyr; is connected with various railways, one of which is 26¼ miles long. Number of shares, 600; cost, £172 13s. 4d.; price in 1824, £265.

From the Dee, at Chester, to Nantwitch, where it communicates with the Whitchurch branch of the Ellesmere canal.

From the Trent, at Stockwith, to Chesterfield; has 65 locks and 2 tunnels, together 2850 yards long, and 9½ feet wide. The lower part of the canal is navigable for boats of from 50 to 60 tons burden, and the higher, being but 26 or 28 feet broad, is navigable for boats of only 20 or 22 tons burden. These boats are 70 feet long and 7 feet broad. Number of shares, 1500: cost £100; price in 1831, £170.

A part of the line of canal between London and Liverpool. Number of shares, 500; amount, £100; price £170.

From loch Gilp to loch Crinan. Number of shares, 1851: cost, £50; price in 1831, £2.

From the Erewash canal, at Langley, to Cromford. It has several tunnels, and passes the river Derwent by an aqueduct 200 yards long and 30 feet high. The arch over the channel of the river is 80 feet broad. Another aqueduct over a branch of the Derwent is 200 yards long and 50 feet high. Each aqueduct cost about £3000. Number of shares, 460; cost £31 2s. 10d.; price in 1831, £420.

From Grand Surry canal to Croydon. It has 23 locks. Number of shares, 4546; originally, £100; price in 1831, £1 17s. 6d.

From the river Dove, between Swinton and Mexburgh to Barnesley canal. The boats are from 50 to 60 tons burden. It has two branches, of 3½ and 1¼ miles in length.

From the river Trent to Derby. Number of shares, 600; cost, £140; price in 1831, £130. It has a branch, the Erewash, 8½ miles in length.

From the Kennet and Avon canal to the river Stour; but not completed in 1824; has a branch 9 miles long.

From Dublin, at the mouth of the Liffey, to the river Shannon, near the town of Moy. It passes 24 miles across a marsh, in which the absorbing nature of the soil rendered the work enormously expensive.

From the Worcester and Birmingham canal. It has 61 locks; 6 tunnels, one 3776 yards in length, another 623 yards, and the other 2926 yards, all 13½ feet wide; and near one of them, the Laplat tunnel, it passes 9 locks, nearly contiguous. Number of shares, 2060; originally, £100; price in 1824, £63.

This canal was instituted in order to connect the Forth and Clyde canal with the city of Edinburgh. A company of shareholders obtained an act of parliament for it in 1817; the work was begun in March 1818; and the whole line was completed in May 1822. It was completed at an enormous expense, in consequence of its having to be carried over a ravine and the water of Leith at Slateford, by a bridge 65 feet in height and 500 in length, and over the Avon about a mile above the bridge of

Name	When made.	Length in miles.	Ascent & Descent in feet and decimal parts. Total.	Pr. mile.	Breadth.	Depth.	
							Linlithgow, by another aqueduct bridge still more stupendous. Beyond this, to the south of Callander, the canal had to be carried through an excavation or tunnel of 600 yards long. Besides these very expensive undertakings, there were many of smaller moment. Altogether the length of the Union Canal is 31 miles; its breadth, including towing-path, thirty yards; where the boats turn, 100 yards, with a depth of five feet throughout.
Ellesmere & Chester, and branches,	1801	109	755	6·9			This canal is said to be the first constructed in England for agricultural purposes, as well as trade. It has 1262 yards of tunnelling. Number of shares, 3575; cost £133; price in 1831, £72.
Erewash,	1777	11⅝	181	15·4			From the Trent to Cromford canal.
Fazeley,	1790	11					Is a part of the Liverpool line, joining the Grand Trunk with the Coventry canal. It is entirely level. The Fazeley and Birmingham, and the Birmingham, are continuations of this.
Forth and Clyde,	1790	35					From the tide-water, at the junction of the river Carron with the Forth, to Glasgow. It was the first considerable work of the kind undertaken in Scotland, having been commenced in 1777 and completed in 1790. It ascends, from the Forth to the summit, by 20 locks, 156 feet, in 10½ miles, and keeps this level 18 miles, to Glasgow and, one mile beyond that city, terminates in the Monkland canal basin. About 2⅝ miles north of the port of Dundas, near Glasgow, a branch of the canal passes off 8⅝ miles, crossing the Kelvin by a stone aqueduct, to the tide-water at Bowling bay, to which it descends by 19 locks, 74 feet in length and 20 in breadth. When full, it has 8 feet of water. Number of shares, 1297; amount of share, £100; price per share in 1831, £600.
Glasgow branch,		2⅝					
Foss Dyke,		11	0	0			From the Trent, at Torksey, to the Witham. It is a level.
Glasgow and Ardrossan,	1812		168	5			This canal was projected for the purpose of carrying goods and coals from Glasgow and Renfrewshire to the port at Ardrossan. From a variety of circumstances it was never cut further than from Glasgow to the town of Johnstone, from whence a railway proceeds to Ardrossan. (q. v.) ☞ It was upon this canal that the light passage-boats, lately introduced, were first used with success. The original thought of them, we believe, belongs to Mr Houston of Johnstone, who, in 1829, got a model one made in wood, which surpassed, on trial, all expectation They are now constructed of very thin sheets of iron, not exceeding the thickness of a shilling, and used on various canals throughout the United Kingdom. The best, and indeed the earliest manufacturers of them, are Messrs Hannah & Reid, smiths in Paisley. Those made for the Glasgow and Ardrossan canal are 70 feet long, 5½ broad, and weigh only 17 cwt. They carry with ease 70 passengers, and are dragged at a great velocity by a couple of horses. The whole cost of one of them amounts to only £150. The secret of their excellence lies in their shape and lightness, by which the horses are enabled to drag them *above* the surge, which is formed by all vessels in a state of motion, and which impedes their progress. Nothing can be smoother or less fatiguing to the traveller than these elegant conveyances; and the invention of them, at a time when rail-roads were threatening to supersede canals, has been fortunate for those interested in the latter.
Glenkenns,	1802	27					From the Dee, at Kirkcudbright, to Dalry.
Gloucester,	1793	18¾				15	A channel for ship navigation, to avoid the windings of the Severn from
Hockcrib branch,		2			70	to 18	Berkley Pill, where it leaves that river, to Gloucester, where it joins the river again. Number of shares, 1960; price in 1824, £100, and a loan of £60 per share, making the investment £160 per share.
Grand Junction,	1805	93½	587	6·3	36—24	4½	A part of the line between London and Liverpool, from Brentford to the Oxford canal at Braunston. It has 101 locks; passes the river Ouse and its valley by an embankment about half a mile in length and 30 feet high. It has a tunnel at Blisworth, 3080 yards in length, 18 feet high, and 16½ wide; and another at Braunston, 2045 yards long, the other dimensions being the same as those of the Blisworth tunnel. Number of shares, 11,600, originally, £100; price, £243.
Paddington branch,		13½					
6 other branches,		40					
Grand Surrey,	1801	12					From the Thames, at Rotherhithe, to Mitcham. It is of large dimensions, being navigable by the Thames boats. The company pays to London, annually, £60, for the junction of the canal with the Thames.
Grand Western,	1796	35					From the mouth of the Ex, at Topsham, to Taunton bridge; in 1824, was but partially finished. Number of shares, 3096; cost £79; price in 1831, £8.
Tiverton branch,		7					
Grand Trunk,	1777	93	642	6·9			A part of the line between London and Liverpool. It has 4 tunnels, in length 3940 yards, and 9 feet wide. Number of shares, 1300½; price in 1824, £2150. The tonnage is from 3d. to 4½d. per mile.
its branch,		37					
Grand Union,		23½	130	5·5			From the Leicester and Northamptou Union canal, near Foxton, to the grand junction, east of Braunston tunnel. Number of shares, 1521; cost, £100; price in 1824, £50. The canal has, besides, a loan, at 5 per cent. interest, of £19,327.
Grantham,	1799	33¾	148	4·4			From the Trent, near Holme Pierpoint, to Grantham. It has divided 8 per cent., and left a clear surplus of £3000 to meet unforeseen accidents. Number of shares, 749; cost, £150; price in 1831, £195. It is supplied with water wholly from reservoirs.
Haslingden,	1793	13					From the Manchester, Bolton and Bury canal, at Bury, to the Leeds and Liverpool, at Church.
Hereford & Gloucester,	1790	36⅓	225	6·1			From the Severn, at Gloucester, to the Wye, at Hereford. It has 3 tunnels, of 2192, 1320, and 440, making, in all, 3952 yards. In consequence of the opening of this canal, the price of coals at Ledbury was reduced from 24s. to 6s. per ton. Shares, originally, £100; price in 1824, £60.
Huddersfield,	1798	19½	770	39·5			From Ramsden's canal, at Huddersfield, to the Manchester, Ashton and Oldham canal, at Duckenfield bridge, near Marsden. It has a tunnel of 5280 yards in length. Number of shares, 6238; cost, £57 14s.; price in 1831, £15 19s.
Kennet and Avon,	1801	57	263	4·6			From the Avon, at Dole-mead, near Bath, to the Kennet and Newbury. It has an aqueduct bridge over the Avon. The boats are of 25 or 26 tons burden. Number of shares, 25,328; cost, £35 5s.; price in 1831, £25 10s.
Kingston & Leominster,	1797	45¾	544	11·8			From the Severn, at Areley, to Kingston. It has two tunnels of 3850 and 1250, making 5100 yards.
Lancaster,	1799	76	287	3·8		7	From Kirby Keudal to Houghton. It has tunnels at Hincaster and Chorley, 800 yards long in the whole. It passes the Loyne by a stone aqueduct, 50 feet high, on 5 arches, each of 70 feet span. It has also a road aqueduct, near Blackmill, 60 feet high. The boats are 56 feet long

Name.	When made.	Length in miles.	Ascent & Descent, in feet and decimal parts. Total.	Pr. mile.	Breadth.	Depth.	
							and 14 broad. Number of shares, 11,699½; cost, £47 6s. 8d.; price in 1831, £18.
Leeds & Liverpool,	1771	130	841	6·4	42	4½	From Liverpool to Leeds. The boats navigating between Leeds and Wigan are of 32 tons burden; those below Wigan, and on this side Leeds, of 30 tons. The tunnels at Foulbridge and Finnley are, in the whole, 1609 yards long. It has a beautiful aqueduct bridge over the Ayre. The locks are 70 feet long and 15½ wide. The number of shares is 2897¾; originally, £100 each; price in 1831, £395. Tonnage on merchandise, 1½d. per mile; on coals and lime, 1d.; on stone, ½d.
Leicester,		21½	230	10·7			From the Loughborough basin to the Soar, which has been rendered navigable as far as Leicester. Number of shares, 545; cost, £140; price in 1831, £218.
Leicestershire and Northamptonshire Union,	1805	43¾	407	9·3			From Leicester to Market Harborough. It has 4 tunnels, 1056, 990, 880 and 286, in the whole 3212, yards in length. Number of shares, 1897; cost, £83 10s.; price in 1831, £74.
Loughborough,	1776	9½	41	4·3			From the Trent, near Sawley, to Loughborough. Number of shares, 70; cost, £142 17s. 8d.; price in 1831, £2100.
Manchester, Bolton, and Bury,	1797	15	187	12·4			From the Mersey and Irwell navigation to Bolton. The locks have been reconstructed and enlarged. Number of shares, 477; originally, £250; price in 1824, £112
Hasllngden branch,		4					
Market Weighton,	1770	11	35	3·2			
Monkland,							A continuation of the Forth and Clyde canal, to the Monkland coaleries. This canal was begun in 1790 by a company, and was intended to furnish a cheap conveyance for coal from the Monkland coaleries to the city of Glasgow, an object which it has fully accomplished. It extends about 18 miles in length and terminates on the east at a place about 1½ mile south of Airdrie. The canal is 35 feet broad at the top and 26 feet at the bottom. The depth of the water is generally 5 feet. The level is preserved by means of 4 locks of 2 chambers. This canal has been among the most successful in Britain both as regards its serviceableness to the inhabitants of Glasgow and the profit of the shareholders.
Monmouthshire,	1796	17¾	1057	53·5			This canal is remarkable for the extent of its railways and inclined planes. Number of shares, 2409; cost, £100; price, £225. It has, besides, a loan of £43,526, at an interest of 5 per cent.
Montgomeryshire,	1797	37	225	8·3			From a branch of the Ellesmere canal to Newtown. Number of shares, 700; originally, £100; price in 1831, £80.
Welshpool branch,		3½					
Neath,	1798	14					From the river Neath, at the Giant's Grave, to the Aberdare canal, at Abernant. It serves for the transportation of copper and lead ore from Cornwall to Glamorganshire. Number of shares, 247; cost, £167 10s.; price in 1831, £300.
North Wilts,	1798	8½					From the Thames and Severn canal to the Wilts and Berks.
Nottingham,	1802	15					From the Trent, at Nottingham, to the Cromford canal, near Langley bridge.
Oakham,	1803	15	126	8·4			From Melton Mowbray to Oakham. Number of shares, 522; cost, £130; price in 1831, £32.
Oxford,	1796	19½	209	2·9	30—16	5	From the Coventry canal to the river Isis at Oxford, and a part of the grand line between Liverpool and London. It has 3 aqueducts of very considerable magnitude, a tunnel at Newbold 125 yards long and 12½ feet wide, and one at Fenny Compton 1188 yards long and 9½ wide. It rises, from the level of the Coventry canal, in 45⅛ miles, to the summit at Marston Tolls, 74 feet 1 inch, by 12 locks; and descends, from the summit at Claydon, in 35 miles, to the Isis, 195½ feet, by 30 locks. It has 188 stone and brick bridges. It cost £178,648 stock, besides £130,000 loan, above half of which has been paid off. Number of shares, 1786; originally, £100; price in 1831, £500.
Peak Forest	1800	21					From the Manchester, Ashton, and Oldham canal, at Duckenfield, to the Chapel Milton basin. It has a railway 6 miles long. It passes the Mersey, by a bridge 100 feet high, of 3 arches, each of 60 feet span. Number of shares, 2400; cost, £48; price, £65.
Portsmouth and Arundel,	1815	14½					From the river Arun, near Little Hampton, to the bay connected with Portsmouth harbour. Number of shares, 2520; cost, £50; price in 1831, £10.
Ramsden's,	1774	8	56	7			From the Calder and Hebble navigation to the Huddersfield canal.
Regent,	1820	9	86	9·5			The last link, near London, of the chain connecting that city and Liverpool. It commences at Paddington, from the Grand Junction canal, and meets the Thames at Limehouse, descending, by 12 locks, to a basin communicating with a ship lock. The locks have double chambers, which are estimated to make a saving of one third of the usual quantity of water. It has 2 tunnels, one at Maida Hill, 370 yards long, the other under Islington, 900 yards. Number of shares, 21,418; cost, £33 6s. 8d.; price, £18.
Ripon,	1767	7					From the river Ure, at Milby, to Ripon.
Rochdale,	1804	31	613	19·7			From the Bridgewater canal, in the town of Manchester, to the Calder and Hebble navigation, at Sowerby bridge. It has 49 locks, 8 aqueducts, a tunnel of 70 yards in length, and several reservoirs. Number of shares, 5669; cost, £85; price, £70.
Royal Irish,		68	614	9			From Dublin, in a westward direction, to the Shannon, at Tasmonbarry, nearly parallel to the Dublin canal, and about 10 miles distant from it. Its greatest elevation above the sea is 307 feet, to which it ascends from Dublin by 26 locks, and descends to the Shannon by 15 locks.
Sankey,	1760	12½	78	6·2	48	5	From the Mersey and Irwell navigation, at Fiddler's Ferry, to Sutton Heath mines. It has 10 locks, and also a tunnel, near St Helen's. It was the first canal constructed in England.
Shorncliff and Rye, or Royal Military,	1809	18					From the sea, at Hythe, to the month of the river Rother. It is a level, having locks to keep in the water at low tide. It is large enough to receive vessels of 200 tons burden. Each of its extremities is defended by strong batteries. It was constructed on account of Bonaparte's projected descent on England, and hence its name of Royal *Military* canal.
Shrewsbury,	1797	17½	155	9			From Shrewsbury to the Shropshire canal. One half of the ascent is effected by locks, the other half by inclined planes. It has one tunnel. Number of shares, 500; originally, £125; price in 1831, £250.
Shropshire,	1792	7½	453	60·4			From the Severn, at Coalport, to the Shrewsbury canal, at Downington wood. It has several inclined planes and railways, but no locks.
Somerset Coal,	1802	8½	138	16·2			From the Kennet and Avon canal, at Monkton Coombe, to Paulton. The boats are 72 feet long and 7 broad. It has 22 locks. Number of shares, 900; original cost, £50; price in 1831, £160.
Radstock branch,		7½	138	18·4			

Name.	When made.	Length in miles.	Ascent & Descent, in feet and decimal parts. Total.	Pr. mile.	Breadth.	Depth.	
Southampton and Salisbury,	1804	17½	394	8·4	30	5	From the Itchin, at Northam, to the Avon, at Salisbury.
Stafford and Worcester,	1772	46½					From the river Severn, at Stourport, to the Grand Trunk canal. It has 44 locks. Its boats are of 20 tons burthen. It has 3 tunnels. Number of shares, 700; cost, £140; price in 1831, £710. The tonnage is not to exceed 1½d. per mile.
Stainforth & Keadby,	1798	15					From the river Trent, at Keadby, to the Don, at Fishlake.
Stourbridge,	1776	5	191	38·2	28	5	From the Stafford and Worcester canal, at Stourton, to the Dudley canal. It has 20 locks. Number of shares, 300; originally, £245; price in 1831, £220.
Stover,	1792	6½					From the river Teign, at Newtown, to Bovey Tracey.
Chudleigh branch,		5½	50	8			From the river Severn, at Framilroad, to the Thames and Severn canal, at Wallbridge.
Stroudwater,	1796	8	108	13·5			From Swansea harbour to Hen Noyadd. Like the Neath canal, it serves to transport copper ore from Cornwall to Glamorganshire founderies. Number of shares, 533; originally, £100; price in 1831, £200.
Swansea,	1798	17½	366	20·9			From the river Tamar, at Calstock, to Tavistock. It has a tunnel at Morwelham, 460 feet below the surface. This tunnel led to the discovery of a copper-mine. Its boats are 15½ feet in length and 5 in breadth. Number of shares, 350; originally, £100; price in 1831, £105.
Llansamlet branch,		3					From the Thames, at Gravesend, to the river Medway. This canal has loans to a large amount. Number of shares, 4835; amount, £100; price, £4.
Tavistock,	1810	4½	237	52·7			From the Stroudwater canal to the Thames and Isis navigation. The boats are of 70 tons burthen, being 80 feet long and 5 broad. It has a tunnel at Sapperton, 250 feet below the top of the hill of rock under which it passes. The bottom of this tunnel is an inverted arch.
Mill Hill branch,		2					From the Warwick and Napton canal, near Warwick, to the Digbeth branch of the old Birmingham canal. It has a tunnel at Fazeley 300 yards in length. It has 32 locks.
Thames & Medway,	1800	8½					From the Warwick and Birmingham to the Oxford canal. Number of shares, 980; originally, £100; in 1831, £210.
Thames and Severn,	1789	30½	377	12·3	40—30	5	From the river Wey, near Godalming, to the north branch of the Arun river navigation. Number of shares, 905; cost, £110; price in 1831, £32.
Warwick and Birmingham,	1799	25					From the Kennet and Avon canal, at Semington, to the Thames and Isis navigation.
Warwick & Napton,	1799	15					From the Severn, at Diglis, below Worcester, to the Birmingham and Fazeley canal, at Farmer's bridge.
Wey and Arun Junction,		16					From a detached part of the Fazeley canal, at Huddlesford, to the Birmingham canal, at Wolverhampton. The boats are of 18 tons burden. It has 28 locks.
Wilts and Berks,	1801	52	376	7·2			
Calne branch,		3					
Worcester & Birmingham,	1797	29	128	4·3	42	6	
Wyrley & Essington,	1796	23	270	11·6	28	4½	
Hayhead branch,		5½					
Lordsherry branch,		2½					
Wyrley Bank br.,		4					
Essington branch,		1					
Norwich and Lowestoff Navigation,	1829	50			50		The works near Yarmouth open an inland navigation in two directions; one 30 miles, by the Yare, the other 20 miles, by the Waveney, without a lock. The river Yare discharges at Yarmouth, about 30 miles below Norwich, but the navigation is obstructed by shoals and shifting sands at its mouth. To avoid these obstructions, the river is to be made navigable for sea-borne vessels from Norwich to a place 20 miles lower down the river, called *Reedham Ferry*, where a new cut of 2½ miles is to be made across the marshes, to join the river Waveney at St Olave's bridge, whence the water communication proceeds by a small stream (Oulton Dyke) and two lakes (Oulton Broad and Lothing), from the latter connected with the sea by a channel 700 yards long and 40 feet wide, with a sea-lock 50 feet wide in the clear and 24 feet deep, for the purpose of admitting sea-borne vessels. Oulton Dyke and Oulton Broad are to be deepened. The lock constructed at the outlet of lake Lothing makes an artificial harbour, the first that has been formed in England. This lock has folding gates pointing both landward and seaward, so as to admit of vessels passing in or out at any time of tide, and whether the water be higher on the outside or inside. The harbour covers about 200 acres, the whole contents of which it is proposed, occasionally, to let off at low water, to keep open the channel from the sea.

American Canals. It is difficult to obtain exact information relating to the works of this description in America. Some of them mentioned in the following list are merely projected, and others are not yet completed; nor is it now easy to ascertain precisely what degree of progress has been made.

Canals of Canada.—*Welland canal* was constructed from 1824 to 1829. Its length is 41½ miles; its breadth at the surface 58 feet, at the bottom 26 feet, and its depth 8 feet. This line of navigation passes from the mouth of Ouse river, on lake Erie, northeastward, to strike at a point of the Welland or Chippeway river; and, taking the course of that river downwards, 11 miles, proceeds from thence northward, across the mountain ridge, and down to the mouth of Twelve Mile creek, on lake Ontario. The distance from lake to lake is 43 miles. The deepest cutting, near the summit, is 56 feet. It has 35 locks, 125 to 100 feet long, 32 to 22 feet wide. The capital stock of the company is £200,000; the number of shares, 16,000. This canal admits of sloop navigation, and opens a communication between lake Erie and lake Ontario in the same vessels which navigate those lakes, and saves discharging and reloading cargoes. One of the purposes of its construction was to prevent the trade of that part of Upper Canada which communicates with the great western lakes from being diverted to New York, by the route of the Erie canal. Its execution was facilitated by taking advantage of natural channels of slack water.—*Rideau canal* is a projected navigation for 122 miles, from Hull, on the great Ottawa, to the Gannanoqui, on the St Lawrence, at the Kingston mills.—*La Chine canal* is 10 miles in length, from Montreal, on the St Lawrence, directly to Upper La Chine, on lake St Louis, cutting off a bend in the river, and avoiding the rapids of St Louis. Cost, £220,000; for sloop navigation.—*L'Isle Perrault canal* is a projected work of five miles in length, from St Louis lake, at the foot of St Anne's rapids, to the head thereof, by a canal passing either at the back of St Anne's, or else across the Isle Perrault.—*Grenville canal* is a projected work of 12 miles in length, from the head of Long Sault or Ottawa falls, at the village of Grenville, by a lateral canal, to the foot of Carillon rapids, opposite Point Fortune; for sloop naviga-

tion. Estimated cost, £250,000.—*La Petite Nation canal* is a projected artificial channel of navigation, of 50 miles in length, from the foot of Carillon rapids, at Hawkesbury, on the Ottawa, across the peninsula, to the St Lawrence, at Prescott.

Canals of the United States. Immense improvements have been made in inland navigation, both by rivers and canals, during the fifteen years from 1816 to 1831. More than 1000 miles of canal have been made during that time, besides vast improvements in river navigation; and, in 1831, the numerous works of this sort, already commenced, are prosecuted with unremitted activity. Only a very general outline of these improvements, so important both in a political and economical view, can be given in this work.

Canals in New England.—Cumberland and Oxford canal. This navigation, partly natural and partly artificial, extends about fifty miles, from Portland to Sebago pond, in Maine. The head of the canal is in the town of Bridgeton, at the termination of Long pond, which is 10 miles in length. This pond, together with Brandy pond and Sebago pond, with their outlets, constitutes 27 miles of the canal; 24 locks only are necessary. Tolls are, per mile, for planks, 6 cents per 1000 feet; shingles, 2 cents a thousand; wood, 6 cents a cord, per mile; timber, 6 cents a ton, per mile; goods in boats, 6 cents a ton; boats, rafts, &c., 6 cents additional for each lock. *Middlesex canal* was completed in 1808. It opens a communication between Boston harbour and the Merrimack river, a distance of 27 miles. It has but one summit level, 104 feet above Boston harbour, and 32 above the level of the Merrimack, at the place of its junction with that river in Chelmsford, above Pawtucket falls; on which falls are situated the great manufacturing establishments of Lowell. Its breadth at the surface is 30 feet, at the bottom 20 feet, and its depth of water 3 feet. It makes part of a line of water communication between Boston and the central part of New Hampshire. There are on this canal 20 locks of different lifts, of which the highest is 12 feet. The locks are 75 feet long in the clear, 10 feet wide at the bottom, and 11 feet at the top. The number of aqueducts, over rivers and streams, is 7; and there are 50 bridges, having stone abutments 20 feet apart. Cost, 528,000 dollars; constructed by the Middlesex canal company, incorporated in 1789. The tolls, in 1824, were, for boats, 14,184 dollars; rafts, 5770 dollars; in the whole, 19,954 dollars.—*Bow canal* was made in 1812, and is the continuation of a line of navigation, of which the Middlesex canal constitutes a part. Its length is ½ mile; the lockage 25 feet. Its dimensions, and the size of the locks, correspond to those of the Middlesex canal, being designed to pass the same boats. It passes a fall in the Merrimack of 25 feet, with 4 locks. A dam is constructed across the river, at the head of the falls. Expense of the whole work, 19,000 dollars.—*Hooksett canal*, another work on the Merrimack, 50 rods in length, is also a part of the same line of navigation, and passes Hooksett falls, in that river, by a lockage of 16 feet. These falls are lower down the river than the Bow canal. It has 3 locks. Cost, of the whole works, 13,000 dollars.—*Amoskeag canal*, one mile in length, is another part of the same navigation, being eight miles farther down the Merrimack, at Amoskeag falls, which are passed by this canal with a lockage of 45 feet. It has 9 locks and several dams. Cost, 60,000 dollars.—*Union canal*, a part of the same navigation, having 7 locks in 9 miles, is immediately below the Amoskeag canal, and comprehends 6 sets of falls. Cost, 35,000 dollars. Cromwell's falls, which are below, on the same river, are locked at an expense of 9000 dollars; and 15 miles lower down are the Wiccassee falls, which have been locked at an expense of about, 12,000 dollars. The line of navigation above described commenced at a very early period in the history of canal navigation in the United States; and the undertaking evinced great public spirit and enterprise on the part of the persons who engaged in it, whose inadequate pecuniary remuneration has however, operated as a discouragement from similar enterprises in New England.—*Pawtucket canal*, a branch of the navigation above described, is a channel of about a mile and a half in length, passing Pawtucket falls on the Merrimack, and facilitating the navigation of that river from Chelmsford, where the Middlesex canal meets the river, to Newburyport, situated near its mouth. It is in the town of Lowell. A dam is made across the Merrimack, above those falls, a short distance below the termination of the Middlesex canal, for the purpose of regulating the height of water for supplying the Pawtucket canal, which was originally made merely for the passage of rafts and boats, and corresponded in dimensions to the other works on the same river above, and to the Middlesex canal. About the year 1820, the proprietors of the manufacturing establishments, which have, during the short subsequent period of about ten years, grown to so surprising a magnitude, and which are still rapidly increasing, purchased the Pawtucket canal, and enlarged its channel to the dimensions of 90 feet in breadth, and four in depth, which not only serves for the original purpose of this canal, in passing these falls, which are in the whole about 32 feet in height, but also supplies immense hydraulic works, used for the purposes of manufacturing.—*Farmington canal* was commenced in 1825, upon the plan of connecting, by a line of 78 miles of entirely artificial navigation, Connecticut river at Northampton, in Massachusetts, with New Haven harbour. It is 36 feet in breadth at the surface of the water, 20 at the bottom, and four feet in depth; and passes from New Haven to Farmington, in Connecticut, and from thence to Colebrook. The locks are 80 feet in the clear, and 12 feet wide. Its commencement at New Haven is from a basin of 20 acres capacity. It is (in 1831) nearly completed, and wholly under contract, from New Haven to Southwick ponds, in Massachusetts, a distance, by survey, of 58 miles; lockage, 218 feet.

Hampshire and Hampden canal is a projected work, of 20 miles in length, in Massachusetts, in continuation of the Farmington canal, from Southwick ponds to Northampton; lockage, 298 feet.—*Enfield canal*, and the three others next mentioned, are short cuts at the different falls on Connecticut river. This was the latest of these improvements, having been commenced by a company, under a charter granted in 1824. It is 5½ miles in length, and passes the Enfield falls, in the state of Connecticut. It has three stone locks, each 10 feet lift, 90 feet by 20. This canal adds 40 miles to the steamboat navigation up the Connecticut. Like the Pawtucket at Lowell, on the Merrimack, it is intended both to facilitate navigation and supply hydraulic works. It is a very important improvement, and does great credit to the undertakers.—*South Hadley canal*, the next artificial channel of navigation up the Connecticut, is in South Hadley, in Massachusetts. It is 2 miles in length, and overcomes the rapids in the Connecticut at the place, amounting to about 40 feet. There is a cut in this canal, 40 feet deep, 300 feet long, in solid rock. This improvement, and also the one next mentioned, were undertaken by a company which was chartered in 1792.—*Montague canal*, in the town of Montague, also in Massachusetts, is the next in order, higher up the Connecticut. It is 3 miles in length, 25 feet broad, and 3 deep. By this canal the navigation passes the Montague falls, which commence

above Miller's river; it terminates above the mouth of Deerfield river; lockage, 75 feet.—*Bellows Falls canal* is a short artificial channel, higher up the Connecticut, in the state of Vermont, for the purpose of passing Bellows falls.—*Blackstone canal* (see that article for a description of this canal). A few miles above Providence harbour, this canal meets the Blackstone or Pawtucket river, and passes up along its western bank a great part of its route, and is wholly supplied by the waters of this river and its tributary streams and ponds, some of the latter being made use of as extensive reservoirs, whereby, in the dry season, all the water used by the canal, and so taken away from the various manufacturing works established at the different falls on the river, is replaced, and supposed, indeed, to be more than compensated for. This canal facilitates and greatly increases the trade from the northern part of the state of Rhode Island, and the interior central part of Massachusetts, to the market of Providence, that of New York, and the ports of the Middle and Southern States.

New York Canals.—The state of New York has an extensive system of artificial inland navigation, connecting the navigation of Hudson river with that of lake Champlain, lake Ontario, lake Erie, and Delaware river.—*Champlain canal* is 63½ miles in length, 40 feet wide at the surface, 28 feet at the bottom, and 4 feet in depth. This, and the Erie, Oswego, and Cayuga canals, were made by the state, at the public expense, and remain under the administration of the government, as public property. The Champlain canal passes from Albany to Whitehall, on lake Champlain, connecting Hudson river with that lake. This canal commences at Whitehall, at the head of sloop navigation on lake Champlain, and, immediately rising by 3 locks, 26 feet, proceeds on a level 5½ miles up the valley of Wood creek, enters that stream, and follows its channel for 3 miles, to a lock of 4 feet lift, which extends the navigation up the creek 3½ miles farther, to Fort Anne village, where, after rising by 3 locks 24 feet, it leaves the creek, and proceeds 12 miles on a summit level, through the towns of Fort Anne and Kingsbury, to Fort Edward. Here it receives the waters of the Hudson, above the great dam in that river, by a feeder of half a mile in length, and soon after descends 30 feet by 3 locks into the Hudson, below the dam. The great dam is 900 feet long, 27 feet high, and throws back an ample supply of water for the summit level. From Fort Edward the navigation is continued, for the present, down the channel of the Hudson, 8 miles, to the head of Fort Miller falls; around which it is carried by a canal on the east bank of the river, half a mile long, and having 2 locks of 18 feet descent. From Fort Miller the river is made navigable for near three miles farther, by a dam at the head of the Saratoga falls, just above which the canal leaves the river on the western side, and proceeds on a level for 17 miles, through Saratoga and Stillwater, Schuyler's flats, and over Fish creek, by an aqueduct, to a point two miles below Stillwater village. From this point to Waterford, where the canal enters the Mohawk, and meets the Erie canal, a distance of 9 miles, it descends 86 feet by 9 locks, 6 of which are in the town of Waterford. From Waterford, the Hudson is now made navigable for sloops to Troy, 3½ miles below, by a dam across the river at the latter place, 1100 feet in length, 9 feet high, and having a sloop lock, at its eastern extremity, 114 feet long, 30 feet wide, 9 feet lift. The cost of this lock and dam was 92,270 dollars.—*Erie canal*, extending from Albany on the Hudson to Buffalo on lake Erie, is 363 miles in length, 40 feet wide at the surface of the water, 28 feet at the bottom, with a depth of 4 feet of water. It has 2 summit levels in this distance, and the whole lockage is 692 feet. It was completed in 1825. The locks are 83 in number, all of stone masonry, each 90 feet long in the clear, and 15 feet wide. From Buffalo, the canal proceeds 10 miles to Tonnewanta creek. The Tonnewanta is then used for 12 miles; thence by a deep cut 7½ miles to Lockport, where it descends 60 feet by 5 locks; thence on a uniform level 63 miles to Rochester, where it crosses the Gennesee, by an aqueduct of 9 arches, each 50 feet span. Here it is supplied by a navigable feeder, 2 miles long, connecting it with the Gennesee; thence easterly to Montezuma, 67½ miles, in which distance it descends 126 feet, and crosses Mud creek twice by aqueducts. At Montezuma, the level of the canal ascends, and, in a distance of 27 miles, to Salina, rises 67 feet. In Salina commences the 'long level,' a distance of 69 miles, to Frankfort. From Frankfort, the canal descends, in 12 miles, 49 feet, to the head of Little Falls, where are 5 locks, and an aqueduct over the Mohawk, of 3 arches. From the foot of Little Falls, the canal continues for 70 miles down the valley of the Mohawk, on the south side of the river, to Niskayuna, 4 miles below Schenectady, where it crosses the Mohawk by an aqueduct 748 feet long. The descent from the foot of Little Falls to Niskayuna is 86 feet. After crossing the Mohawk, the canal proceeds along the north bank thereof for 12 miles, and then re-crosses by an aqueduct 1188 feet long, and passes by the Cohoes falls, where, in the space of 2 miles, it descends 132 feet, by 16 locks. A little below the Cohoes falls, a feeder enters from the Mohawk, and connects the Erie with the Champlain canal; and the united work then proceeds to Albany, 8½ miles, in which distance it descends 44 feet, and terminates in the tide waters of the Hudson. Cost, 7,602,000 dollars.—*Oswego canal* is a branch of the Erie. This navigation passes from Oswego to Syracuse, connecting lake Ontario with the Erie canal. It has 123 feet of lockage, all descending towards lake Ontario. One half of the distance, is a canal connected with Oswego river by locks and dams; the other half is a slack-water navigation on the river. Its structures consist of 22 bridges, 1 aqueduct, 7 culverts, 2 waste weirs, 8 dams across the river, 13 locks of stone, and 1 of stone and timber. Cost, 525,115 dollars. It has been made since the Erie canal.—*Cayuga and Seneca canal*, another branch of the *Erie*, made in 1828, extends from Geneva to Montezuma, connecting Seneca and Cayuga lakes with the Erie canal. The work consists of 10 miles of independent canal, and 10 miles 24 chains of slack-water navigation. There are 7 locks, embracing 73½ feet of lockage, 19 bridges, 5 safety-gates, 5 dams, and 6 culverts. Cost, 211,000 dollars.—*Delaware and Hudson canal* is not, like the preceding, a work of the state, having been made by a private company. It is 64 miles in length, 32 feet wide at the water's surface, 20 feet at the bottom, 4 feet in depth, and has 615 feet of lockage. It commences on the western side of the river Delaware, at Carpenter's point, and passes across to the Hudson, which it enters 4 miles below Kingston, and thus connects those two rivers. It also unites, in Pennsylvania, with the Lackawaxen canal. These canals, when united, extend 117 miles. Length from the tide water of the Rondout, to the summit level between the Hudson and Delaware, 38 miles, with a rise of 535 feet. From the summit level to the Delaware, is 26 miles, and a descent of 80 feet. Up the Delaware to the mouth of the Lackawaxen, is 17 miles, and a rise of 148 feet. Up the Lackawaxen to head water, at Kean's pond, is 36 miles, and a rise of 668 feet. Total lockage, 1431 feet. Cost, 16,000 dollars per mile. The Delaware and Hudson canal company were incorporated in 1823. Tolls not to exceed 8

cents per mile per ton of coal, and 4 cents for other merchandise; the same for every 100 feet, cubic measure, of timber, and every 1000 feet boards, and every 5000 shingles.

New Jersey.—*Morris canal* was commenced in 1825. It is 131 miles in length, from 30 to 32 feet wide at the surface, 16 to 18 feet at the bottom, and 4 feet in depth; the whole lockage is 1657 feet. It extends from Jersey city, on the Hudson, across the state of New Jersey, to the Delaware, opposite Easton, where it connects with the Lehigh canal. The summit level is near lake Hopatcung. On the western division, from the feeder at the summit level to the Delaware, are 7 locks, overcoming a difference in level of 67 feet, and 11 inclined planes, overcoming 691 feet. On the eastern division, between the summit level and the Passaic, there are 17 locks, overcoming a difference of 156 feet, and 12 inclined planes, overcoming 743 feet. There are, within these limits, 4 guard-locks, 5 dams, 30 culverts, 12 aqueducts, 200 bridges and upwards. The aqueduct across the Passaic, at Little Falls, is of cut stone, the duct resting on a single arch of 80 feet, with 50 feet radius, and measuring 52 feet perpendicular above the water level, that is, to the coping of the side-walls; extent, from wing-wall to wing-wall, 215 feet.—*Delaware and Raritan canal* is a projected work in the same state.

Pennsylvania canals. The state of Pennsylvania has a very extensive system of canal navigation, a very large part of which has been undertaken by the state at the public expense.—*Schuylkill canal and navigation* was commenced in 1816, and has been in operation a number of years. Its length is 110 miles; lockage, 620 feet, or only 5·64 feet per mile; is 36 feet wide at the surface of the water, 24 feet at the bottom, and 4 feet deep, and extends from Philadelphia to Reading, and from thence to mount Carbon. It is sometimes called the *Schuylkill navigation.* It comprises 31 dams, commencing at Fair Mount water-works, near Philadelphia, by which is produced a slack-water navigation of 45 miles; also 23 canals, extending 65 miles; 125 locks, 17 feet wide, 80 feet long, of which 28 are guard-locks. There are 17 arched aqueducts; a tunnel of 450 feet, cut through and under solid rock; 65 toll and gate-houses. The dams vary from 3 to 27 feet in height. Total cost of the improvements, January 1, 1830, 2,236,937 dollars. Tolls, for 1826, 43,109 dollars; 1827, 58,149 dollars; 1828, 87,171 dollars; 1829, 120,039 dollars. It was constructed by the Schuylkill navigation company, incorporated in 1815. The company may declare a dividend not exceeding 25 per cent. per annum, and the tolls are to be regulated accordingly.—*Union canal and navigation,* constructed in 1827; length 82 miles, exclusive of a navigation of 7½ miles; lockage, 520 feet; 36 feet wide at the surface, and 24 feet at the bottom, and 4 feet deep. It extends from 4 miles below Reading to Middletown, connecting the Susquehanna and Schuylkill rivers, and uniting at Reading with the Schuylkill canal, and at Middletown with the great Pennsylvania canal; the summit level is at Lebanon. The canal begins, at its eastern end, in the Schuylkill works, and ascends along the western bank of the Schuylkill to the valley of the Tulpehocken, and passes up that valley to the east end of the summit level, within 5 miles of Lebanon, rising 311 feet by 54 locks, of various lifts of from 8 to 4 feet. The summit extends 6 miles, 78 chains, part whereof is a tunnel of 850 feet, 18 feet wide, 14 high, opening into Clark's creek valley, along which the canal descends to the Swatara, and, continuing along the valley of this river, terminates at Middletown. Descent from summit, 208½ feet, overcome by 39 locks. It has 43 waste weirs, 49 culverts, 135 road and farm bridges, 12 aqueducts, one of which is 276 feet in length. On this canal are extensive water-works for raising the water of the Swatara to the summit. Cost, 20,000 dollars per mile. Rates of toll to be regulated so as not to give more than 12 per cent.—*Lackawaxen canal* is 36 miles in length, 32 feet wide at the surface, 20 feet at the bottom, and 4 feet in depth. It commences at the termination of the Delaware and Hudson canal, near Carpenter's point, and unites with a rail-road at Honesdale. (See *Delaware and Hudson canal.*) In 1825, the Lackawaxen canal and coal company were authorized to act in union with the Delaware and Hudson canal company. The tolls are not to exceed 1½ cents per ton per mile on boats transporting stone, coal, &c. Great quantities of Lackawana coal are transported along this canal.—*Lehigh canal and navigation* was completed about 1829, is 46¾ miles in length, 60 to 65 feet wide at the surface, 45 feet at the bottom, and 5 feet deep; the lockage is 360 feet. It extends from Easton on the Delaware to Stoddartsville, connecting the Morris canal with the Mauch Chunk railroad. Cost, 1,558,000 dollars. It consists of 37 miles of canal and 9¾ of slack-water pools. The ponds connecting the several lengths of canal are all cleared out in the channel to the width of 50 feet. The canals are furnished with 43 locks, from 6 feet lift to 9, whereof 2 are guard-locks, besides 5 other guard-locks at the pools respectively; dimensions, 22 feet wide, 100 feet long. There are 8 dams, varying in height from 6 to 16 feet. The lock walls are constructed of rough stone. There are 4 aqueducts, 22 culverts. Cost, 25,000 dollars per mile. The Lehigh coal and navigation company were incorporated in 1818. Tolls not to exceed 3 cents per ton per mile for boats, and every ton of shingles in rafts, from the Great Falls to the mouth of Nescoponing creek; and from thence to the mouth of the Lehigh, one cent. per mile; and the same toll is paid for 1000 feet boards. —*Conestoga navigation,* 18 miles in length, with a lockage of 70 feet, passes from Safe Harbour, on Susquehanna river, at the mouth of Conestoga creek, up the course of the creek, to Lancaster. The navigation is effected by a series of locks and dams, the pools never affording less than 4 feet depth of water; the locks are 100 feet by 22, in the chambers; the towing path is on the south side of the river. Cost, 4000 dollars per mile. The company were incorporated in 1825; they are authorized to receive to the amount of 15 per cent. on the sum expended, and the legislature may regulate the rate of tolls, provided they do not reduce them below that rate.—*Conewago canal* is 2½ miles in length, with a lockage of 21 feet, and passes from the foot to the head of Conewago falls, west side of Susquehanna river, York county, Pennsylvania; and the same, east side, Dauphin county. Two dams, one of 800, the other of 500 feet, are connected with the works. There are 1 guard and 3 lift locks, each 110 feet long, by 18 wide. —*Pennsylvania canal* was commenced in 1826, by the state of Pennsylvania, and great progress has been made in constructing the different branches. It includes a number of canals, running in different directions, and known by different names: it consists of five divisions: 1. The Transverse division commences in Columbia, where the Philadelphia and Columbia rail-road terminates, and runs on the Susquehanna to Duncan's island, $44\frac{43}{100}$ miles, at the mouth of the Juniata, thence on the Juniata to Huntington, 89 miles; thence from Huntington to near Holidaysburg, 39 miles. The division of railway proposed from Holidaysburg to the head of the basin at Johnstown is 37 miles; this road crosses the Alleghany, and at its lowest crossing place is 1364 feet 7 inches above the basin at Holidaysburg, and 1141 above

that of Johnstown. The canal then runs from Johnstown to Pittsburg, 104⅓ miles, down the Kiskimenitas and Alleghany. 2. The Middle division is from the mouth of the Juniata up the Susquehanna to the boundary line of New York, 204 miles. 3. The West Branch division from Northumberland, by canal, up the West Branch valley, on the east side of that river, to a dam above the mouth of the Bald Eagle creek, and thence across the small peninsula there formed, to a dam on the Bald Eagle, near Dunnstown. Ascent, by 14 locks, 101 feet; distance, 68¼ miles. 4. The eastern division is in the valley of the Delaware, commencing at Bristol, 18 miles above Philadelphia, and running to Easton, 60 miles. From Easton it is to be continued, under the name of the *Delaware canal*, to meet the Delaware and Hudson canal at Carpenter's point, 66½ miles. Begun in 1827. 5. The western, or Ohio and lake Erie division, is to extend from the mouth of the Kiskimenitas up the Alleghany and French creeks, and thence to the town of Erie, uniting the Ohio and lake Erie, 213 miles.—*French creek feeder* runs from Bemis's mill, on French creek, along the eastern side, 9 miles, down to a point opposite the Conneaught outlet, and thence passing across by an aqueduct westward 12½ miles, to Conneaught lake, 21½ miles.

Delaware and Maryland.—Chesapeake and Delaware canal was commenced in 1824, and opened for navigation in 1829. It is 13⅝ miles long, 66 feet wide at the surface of the water, and 10 feet deep, being intended for sloop navigation between the river Delaware and Chesapeake bay. It leaves the Delaware 45 miles below Philadelphia, and passes across the peninsula to the Chesapeake. This canal has 2 tide and 2 lift locks, of 100 feet in length by 22 in breadth, within the chamber; it is navigable for vessels usually employed in the bay and coasting trade. At the eastern termination of the canal, at Delaware city, a harbour extends 500 feet along the shore, from which two piers, that distance apart, project 250 feet into the river, nearly opposite to Fort Delaware. Between the harbour and the canal, the Delaware tide-lock opens the communication. In this canal is a deep cut of 3¾ miles, 76½ feet in depth at the place where the greatest excavation was made. The summit level is 12 feet above tide-water.—*Port Deposit canal* is a public work of the state of Maryland, of 10 miles in length, from Port Deposit, on the east bank of the Susquehanna, along a line of rapids northward to the boundary line of Maryland and Pennsylvania.—*Potomac river canals.* At Little, or Lower Falls, three miles above Washington, is a canal 2½ miles long; difference of level, 37 feet 1 inch, overcome by a series of 4 sets of locks, of solid masonry, 80 feet long, 12 wide. At Great Falls, nine miles above, is a canal 1200 yards long, lined with walls of stone; difference of level, 76 feet 9 inches, surmounted by 5 sets of locks, of solid masonry, 100 feet long, 10 to 14 wide; lifts from 10 to 18 feet. Both here and at Little Falls, the canal dimensions are 25 feet wide at surface, 20 at bottom, 4 feet deep. Canal works, on a smaller scale, are constructed at Seneca falls, Shenandoah falls, House's falls. These works were executed by the Potomac company, incorporated in 1784, by Maryland and Virginia; but they are to be surrendered to the Chesapeake and Ohio canal company.—*Chesapeake and Ohio canal*, commenced in 1828. The proposed length is 341¼ miles; the breadth, at the surface of the water, 60 to 80 feet; at the bottom, 50 feet; the depth of water, 6 to 7 feet. According to the plan of this canal, it will pass from tide-water of the Potomac river above Georgetown, in the district of Columbia, and terminate near Pittsburg, in Pennsylvania. The first 2 miles of this canal above Georgetown are 70 feet wide on the surface and 7 feet deep; the next 2 miles are 80 feet wide, 6 feet deep. Five miles from Georgetown, the canal is so planned that a branch may be constructed to Alexandria, another to Baltimore, and another to the navy-yard in Washington. The remaining distance to the Point of Rocks (44 miles) is to be 60 feet wide, 6 deep. The locks are to be of stone, 100 feet by 15 feet in the clear. The eastern section of this canal, from one mile below Cumberland to tide-water at Georgetown, is 186 miles 1353 yards; descent, 638 feet. The middle section is from Cumberland to the mouth of Casselman's river, 70 miles 1010 yards; this section includes the summit level, where a tunnel, 4 miles 80 yards long, passing under a ridge of the Alleghany of 856 feet elevation, is necessary, with a deep cut of 1060 yards long at the western end, and another deep cut of 140 yards at the eastern end,—each of these cuts opening into a basin, of 880 yards in length and 64 in width. Length of summit level is five miles 1280 yards; lockage of the whole middle section is 1961 feet. The western section is from the mouth of Casselman's river to Pittsburg, 85 miles 348 yards, embracing a descent of 619 feet; lockage on the whole canal, 3215 feet. The first estimate of the cost was 22,375,000 dollars, but it is maintained that the cost will not exceed 10,000,000 dollars. The United States have authorized a subscription of 1,000,000 dollars to the stock of this company. To be constructed by the Chesapeake and Ohio canal company. Charter granted by Virginia in 1824, confirmed by Maryland and congress in 1825. Tolls not to exceed fifteen per cent. dividend.

Ohio. The state of Ohio has commenced the construction of canals, as public works, on a very liberal scale.—*Ohio State canal*, from Cleveland, on lake Erie, to the Ohio, at the mouth of the Scioto; lockage, 1185 feet; length of the main line is 306 miles; feeders, 15 miles; total, 322 miles. Estimated expenses, 2,801,000 dollars. The route is from Portsmouth, on the Ohio (where it is 474 feet above tide level, and 94 below lake Erie), up the valley of the Scioto, to Pikestown; thence crossing the river to near Chillicothe; thence again crossing the river, it continues along the eastern bank to the Big Belly creek, where it receives a feeder, ten miles long, from the Scioto at Columbus; it then passes up the valley of Walnut creek to the Licking and Walnut creek summit, between the head waters of those streams. From the summit it continues down the valley of Licking creek to Rocky Fork, and thence across the valley to the Tomaka, and down it to near its junction with the Muskingum. From this point the ascent commences, and the line passes up the Muskingum valley to White Woman's creek; crossing this, it proceeds up the valley of the Tuscarawas Fork, first on the western, then on the eastern bank, to a point where its two head-waters unite near the south-west angle of Portage county. This is the centre of the Portage summit, extending 10 miles. From the north of the Portage or Akron summit (499 feet above the Ohio at Portsmouth, 973 feet above the Atlantic, 405 above lake Erie), it passes down the Cuyahoga valley, first on the west, afterward on the east side of the river, to within 6 miles of the mouth at Cleveland, for which 6 miles the river channel with a towing-path is to be used.—*Miami canal*, 40 feet wide at the surface, and 4 feet in depth, from Cincinnati on the Ohio to the Maumee, near the head of lake Erie, was commenced in 1825. Length of main line, 265 miles; feeders, 25 miles; total, 290; lockage, 889; estimated expense, 2,929,957 dollars. The entire line from Cincinnati to Dayton is (1831) completed. This division

embraces 22 locks; ascent from the Ohio, at low water, 108 feet; length of canal, 65; feeders, 2; total, 67 miles; cost, 746,852 dollars. From Dayton the line is to be extended to lake Erie. The summit level, commencing 18 miles north of Dayton, extends 60 miles within a single lock; and this level, together with 75 miles of the line north of it, must receive all its waters from feeders from the Mad and Miami rivers. To aid the state in extending this canal to lake Erie, there is assigned by congress, of the public lands which the same shall pass through, a quantity equal to one-half of five sections in width, on each side of the canal, between Dayton and the Maumee river, at the month of the Auglaise, the United States reserving each alternate section; provided this extension be commenced within five years from May, 1828, and finished within twenty; the canal to be a highway for the United States, free from toll.

Virginia and North Carolina.—Appomattox river canals. These canals are for the purpose of improving the navigation of the Upper and Lower Appomattox.—*James river canals.* The river is navigable, for vessels of 125 tons burthen, to a little below Richmond. At the city, there are twelve locks, overcoming an ascent of 80 feet, and connecting the tide water with a basin on Shockoe hill. From this basin proceeds a canal, 25 feet wide, 3 deep, for 2½ miles, where it enters the stream; at 3 miles farther are 3 locks, overcoming an ascent of 34 feet, and a short canal leading to Westham, at the upper end of Great Falls.—*James and Jackson river canal and navigation*, from Richmond basin, by canal, up the James river valley, to the head of Maiden Adventure's falls, Goochland county. Distance, 30½ miles; width of canal, 40 feet; depth, 3½; finished in 1825; cost, 623,295 dollars. Also from the lower end of Irish falls, or Piney island, by canal, along the margin of James river to the mouth of North Branch, in Rockland county. Distance, 7 miles. The fall is overcome by lockage 96 feet; cost, 340,000 dollars. —*Shenandoah canals*, for the improvement of the Shenandoah. They are situated near Port Republic. A fall of 50 feet is overcome by six short canals with stone locks.—*Dismal Swamp canal* is 22½ miles in length, 40 feet wide, and 6½ deep, passes from Deep creek to Joyce's creek, at the head of Pasquotank river, connecting the waters of the Chesapeake and Albemarle sound; partly in Virginia and partly in North Carolina. This canal was finished, upon a circumscribed plan, in 1822. Its dimensions have since been enlarged. Every quarter of a mile, the canal is widened 60 feet, for turn-out stations. The locks newly constructed correspond in dimensions with those of the Chesapeake and Delaware canal; and the old ones may be so altered when necessary. The summit level is 16½ feet above the Atlantic at mid-tide, and is supplied by a feeder of five miles, from lake Drummond. The basin, at Deep creek, is half a mile in length, and 15 feet above the level of tide water. The North-west canal connects North-west river (which empties into Currituck sound in North Carolina) with the main canal, requiring a cut of 6 miles. This canal is 24 feet wide, 4 feet deep. —*Weldon canal* is 12 miles in length, along the Weldon or Great Falls in Roanoke river, in which distance the river descends 100 feet.—*Danville and Dan river canals* are a series of improvements on the upper branches of Roanoke river. The expenditure of the Roanoke navigation company, for these purposes, has been about 350,000 dollars.—*Cape Fear river canals*, from New Inlet, at Smith's island, at the mouth of Cape Fear river, up the stream to Wilmington, and thence, by a course of lock and dam improvements, up to the head thereof, formed by the union of Deep and Haw rivers, below Haywoodsborough, in Chatham county; distance, 200 miles. These canals, &c., are for the purpose of improving the navigation of the river. This work is prosecuted by the state of North Carolina.—*Wateree river and Catawba river canals*, from the confluence of the Congaree and Wateree rivers, up the course of the latter, as also of the Catawba river, across North Carolina, to near the source thereof. Distance, by the river channel improvements and lateral canals together, 275 miles.—*Santee, Columbia, and Saluda canals*, from Columbia, through the Columbia canal, into Broad river, and through the Saluda canal, from Broad into Saluda river, up which and through Drehr and Lorick's canals, on to the Abbeville county line, near Cambridge; also from Santee river, by the Santee canal, into Cooper's river, and down this river to the port of Charleston. Distance, by mixed navigation, 150 miles. These comprise 5 canals with 28 locks, overcoming falls of 217 feet. The Santee and Cooper's river canal is 22 miles long, uniting Santee river to the head of Cooper's river. The ground rises, by an ascent of 35 feet to the summit level, by 4 locks. Towards Cooper's river, the descent is 68 feet, overcome by 9 locks. The locks are 60 feet long by 10 feet wide. The canal is 32 feet wide at top, and 20 feet at the bottom; 4 feet deep. It was completed in 1802, at an expense of 650,667 dollars. —*Winyaw canal* is 10 miles in length. It unites the Santee river with the Winyaw bay.

Kentucky.—Louisville and Portland canal is about two miles in length, 50 feet wide at the bottom, with a lockage of 22½ feet. It was not fully completed in 1831. It passes from the Ohio, at Louisville, to a point of the same below the rapids, near Portland. Distance, by the bend of the river, three miles; constructed by the Louisville and Portland canal company, which was incorporated in 1825. The canal is for the passage of large vessels. It commences from the lower end of a basin or estuary, which extends along the shore of the river for the whole length of Louisville, and is connected with the river at its upper end. From the lower part of this basin, the canal traverses the point formed by the bend of the river at the falls, and re-enters the river at Shippingsport. The bottom is to be 50 feet wide, sunk 4 feet below the level of the basin at Louisville, at time of low water; the banks to be elevated two feet above the highest water mark known at Louisville, which makes forty-two feet from the bottom of the canal, and to be sloped as 1¾ base to 1, so far as respects the upper or earthen portion; underneath there is a solid bed of stone for a foundation the whole length of the canal, and this, cut perpendicularly, to the requisite depth, varying from 1 to 10 feet; the slope above which, to the top of each bank, faced with stone. There are 3 lift-locks, of 7 feet lift each, and a guard-lock at the lower end of the canal; dimensions, 190 feet long by 50 feet wide. in the chamber. The United States have contributed towards this important work.

Georgia.—Savannah and Ogatchee canal is 16 miles in length, 33 feet wide at the bottom, and 5 feet in depth, passing from Savannah river, commencing at Savannah, to the Ogatchee river; lockage, 29 feet; estimate of cost, 162,276 dollars; locks 18 feet wide, 90 long. It is continued from the Ogatchee to the Alatamaha.

Louisiana.—New Orleans and Teche river canal is a projected navigation of 100 miles in length, from a point on the Mississippi, opposite New Orleans, to the waters which unite with the Teche river, at Berwick's bay. A portion of this canal, from Lafourche to Terrebonne, was completed by individual enterprise.—*Carondelet canal* is 1½ mile long, 30 feet wide. and

4 feet deep, and extends from bayou St John to a basin in the rear of the city of New Orleans. This canal is without locks. Through it the tide flows into the basin.—*Lafourche canal* passes from the river Lafourche, 16 miles below its efflux from the Mississippi. It is opened from the right bank into a small creek, uniting with lake Verret. It is through this channel, at high water, that boats are taken to and from the lower part of Attaceapas into the Mississipi, or from the latter stream; navigable only in times of high flood.—*Plaquemine canal* passes from the Mississippi into bayou Plaquemine, at its efflux from the Mississippi. The mouth of the Plaquemine is closed by a raft of timber, and the canal (a short cut of about 400 yards) was made across the point, below the bayou. It is only navigable in times of high flood.

CANALETTO; 1. a Venetian painter, born in 1687, whose true name was *Antonio Canale*. He is celebrated for his landscapes, which are true to nature, and his architectural paintings. He died at London, in 1768. There is a bird's-eye view of Venice painted by him. He is also said to have first used the *camera obscura* for perspective. 2. Bernardo Bellotti, who was likewise a good artist, and painted at Dresden many Italian landscapes, also goes by this name. He lived in Dresden, where he was a member of the academy of painters, and died in 1770.

CANARIES; a cluster of islands in the Atlantic, considered as belonging to Africa, the most easterly being about 150 miles from cape Non. They are 13 in number, 7 of which are considerable, viz., Palma, Ferro, Gomera, Teneriffe, Grand Canary, Fuerteventura, and Lancerota. The other 6 are very small; Graciosa, Roca or Rocca, Allegranza, Sta. Clara, Inferno, and Lobos. Lon. 13° 20′—18° 10′ W.; lat. 27° 30′—29° 30′ N. The extent and population of the seven largest, according to Ledru, are given in the following table:

	Sq. leagues.	*Pop.*	*Pop. to sq. l.*
Teneriffe,	73	70,000	958
Fuerteventura,	63	9,000	142
Grand Canary	60	50,000	833
Palma,	27	22,600	837
Lancerota,	26	10,000	384
Gomera,	14	7,400	528
Ferro,	7	5,000	714
	270	174,000	644

Hassel states the population of the whole at 181,000, and the square miles at 3213. The soil of these islands is very fertile, and produces all kinds of grain, fruits, and pulse in great abundance; so that the name of *Fortunate Islands*, which the ancients gave them, was well deserved; but the method of cultivation practised by the natives tends very little to its improvement. All the islands furnish good wine; but the preference is given to the wines of Palma and Teneriffe. The situation of the Canaries, the salubrity of their climate, the fertility of their soil, and the quality of their productions, all conspire to render them the most valuable of the Spanish colonies. The exports amount to 242,000 dollars annually, and consist of wine, raw silk, soda, and fruits. One of the most recent works on these islands, and probably the most valuable one, is Leopold Von Buch's *Physikalische Beschreibung der Canarischen Inseln*, (Physical Description of the Canary Islands,) by Leopold Von Buch; Berlin, 1825, 4to. They are of volcanic origin, and were, as has been stated, known to the ancients. Juba II., king of Mauritania, described them first with some degree of accuracy. He graced a triumphal entry of Cæsar into Rome, was instructed in all branches of liberal knowledge, and became a highly accomplished prince. Pliny followed his description of the islands. Juba called the Canaries Proper *Fortunatæ*, but Madeira and Porto Santo, *Purpureæ*. Of the island of Ferro, which he calls *Ombrios*, and of the others, he gives an interesting account. The loss of this work is the more to be regretted, as we might reasonably hope to find in it some information respecting that mysterious tribe who originally inhabited these islands. This people understood how to embalm their dead, who were sewed in goat-skins, put into coffins of one piece of wood, and placed in grottoes. These mummies smell agreeably, but fall to dust if they are taken out of their goat-skin coverings. The Spaniards relate strange things of the civilization of these tribes, called *Guanchez*, of their respect for women, of their chastity, and aristocratic constitution. Their language resembled that spoken on the neighbouring continent; but we know too little of it to be able to give any opinion respecting it. Between 1316 and 1334, the Spaniards, pressed by the Moors, discovered and conquered these islands; and they are laid down with accuracy in the old map which Andreas Bianco published in Venice, 1436. The Spaniards seem, however, not to have esteemed these islands much; for the infante of Portugal, Henry the Navigator (q. v.), ordered them to be taken possession of, and prosecuted his discoveries from them to the coast of Guinea. In 1478, the Spaniards undertook again the conquest of the Canaries. At the end of the 15th century, they had subdued the original inhabitants entirely; and they extirpated them at a later period. At present, the islands are inhabited almost entirely by Spaniards: only a few Portuguese reside there. Teneriffe (q. v.), is an island of basaltic formation, thrown up by internal convulsions. The fortified capital is the seat of the governor, has 8400 inhabitants, and an excellent harbour on the eastern side of the island. Another city, Laguna (8800 inhabitants), is the seat of the bishop (who has an income of about £6000 sterling), and of the tribunals. The island Lancerota, or Lancelotta, contains three volcanoes, and, in 1823, experienced violent eruptions. Five islands of this cluster are uninhabited. The people of the Canaries are rigid Catholics.

CANARY-BIRD, or CANARY FINCH. See *Finch*.

CANARY, GRAND, or CANARIA; an island in the Atlantic ocean, about 180 miles from the coast of Africa. It is the most fertile and important of the Canary islands, to which it gives name. Canary, or Cividad de Palmas, is the capital of the island. See *Canaries*.

CANCER, in astronomy; the fourth sign in the zodiac (q. v.), marked thus ♋, which the sun enters on the 21st day of June, thence called the *summer solstice*. It consists, according to Kepler, of 17, according to Bayer, of 35 stars, two of which are of the third magnitude. Flamstead made a catalogue of 83 stars, the comparative brightness of several of which will be found estimated by doctor Herschel (*Phil. Tran.* lxxxvii., 311). The *tropic of cancer* is a small circle of the sphere, parallel to the equator, from which it is $23\frac{1}{2}$° distant, and marks the sun's greatest northern declination. It is so called because it passes through the beginning of the sign Cancer.

CANCER. In medicine, this name is given to a roundish, unequal, hard, and livid tumour, generally seated in the glandular texture. Though this is the texture in which it is believed always to originate, it may extend to others. This is doubted by some; and the disease which is often met with in the immediate neighbourhood of advanced cancer, and in different textures, is, by them, ascribed to mechanical pressure of the cancerous tumours, aided by the acrid discharges which accompany its ulceration. The name was derived from a supposed resemblance of the tumour to a crab, and furnishes a good example of the

nomenclature from resemblance, which was very much in use in the early periods of the sciences. Two forms of cancer are recognized by physicians. They may rather be called two states or stages of the same disease. One of these, and the first, is carcinoma, scirrhus, or concealed cancer, of some writers. The second is the open, or ulcerated cancer—ulcerated carcinoma, as it is designated by writers. Under proper internal treatment, the second stage may be kept off for some time; and, in favourable cases, the extirpation of the tumour by the knife may effect a cure. The disease is kept in check, in the first case, but is not removed, and is very prone to pass into the ulcerative stage. The fact that this can be deferred, by proper treatment, is an important one. The sufferings of the patient are thus made less, especially during the first stage; and even in the last, their severity is much mitigated. One very early symptom of carcinoma is pain. This pain differs from that which ordinarily accompanies local diseases of a different kind. It is described as *lancinating*, occurring somewhat in paroxysms, and resembling the suffering which the sudden passage of a sharp and pointed instrument would produce in the part. Besides this, there is always more or less dull pain present. The progress of the disease, and the occurrence of the second stage, are marked by increased pain of both kinds; by increase in the size of the tumour, augmented heat, greater inequality in the surface, a darker colour, and increased tenderness on pressure. When ulceration is just established, and even a little before, the patient complains of general irritation of the skin; the stomach is disturbed; and symptoms of constitutional irritation, more strongly marked, make their appearance. Ulceration begins on the *surface* of the tumour, and parts are destroyed, in succession, from without, until the whole texture presents a mass of disease. Instead of this destructive ulceration, we have, in many cases, fungous masses projecting from the diseased surface; and these, at times, attain considerable size. But it is not a character of carcinoma to grow, and become as large as other diseases of some of the organs in which it appears. This is especially true of it when seated in the womb. An offensive, sanious discharge proceeds from the ulcer. Bleeding often takes place from it, especially when fungous, either from mechanical irritation, though slight, or from accidental excitement of the arterial system only. Carcinoma is a malignant disease. Its tendency is to death. The constitution has not power to overcome it; and hence, when left to itself, it is certainly mortal. Internal remedies do little more than palliate symptoms, or prevent the rapid progress to ulceration, which belongs to the disease. The only remedy is the knife; and, in cases in which the constitution and neighbouring parts are not contaminated, extirpation by the knife has removed the disease entirely. There are parts of the body which are liable to carcinoma, in which extirpation cannot be practised, and some in which, though an operation has been performed, death has, nevertheless, followed. In cases of this sort, especially those of the first class, palliatives only can be resorted to; such remedies, namely, as mitigate suffering, and retard the progress of the disease.

CANCER ROOT, or BEECH DROP (*orobanche Virginiana*, L.); a parasitic plant, indigenous in America, growing almost exclusively on the exposed root of the beech tree. The whole plant is powerfully astringent, and the root of a brownish colour, spongy, and of a very nauseous bitter taste. It has been applied more externally than internally to the cure of cancer. The *one-flowered cancer-root* (*orobanche uniflora*) is used in the same manner. All parts of the plants are used in medicine.

CANDELABRA. Torches and lamps were the means used by the ancients for obtaining artificial light. The latter were either suspended from the ceilings of their rooms, with chains, or placed upon small, movable tables (*lampadaria*, *candelabra*, and *candelabri*). The candelabra were originally made of cane, with one plate fixed above and another underneath, or with feet, for supporters. The Greeks called these λυχνουχοι. The Grecian artists produced, in ornamenting these lamp-stands, the richest forms, which always, however, had reference to the original cane, and were encircled with an infinite variety of beautiful ornaments. Sometimes they were shafts in the shapes of columns, which could be shortened or drawn out; sometimes the luxuriant acanthus, with its leaves turned over; sometimes they represented trunks of trees entwined with ivy and flowers, and terminated by vases or bell flowers at the top, for the reception of the lamps. Examples of these forms may be found in the British museum and the Louvre, but particularly at the Vatican, where a gallery is filled with marble candelabra. Candelabra of yet more delicate forms, of bronze, inlaid with silver and other metals, have been found in Herculaneum. The following represent three of these, of different shapes.

In ancient times, Tarentum and Ægina were famous for their elegant candelabra. The graceful and expressive form of this utensil was made use of for colossal works of art, particularly on account of its resemblance to the holy torches employed in the worship of Æsculapius. The largest and grandest of those monuments was the Pharos, at the harbour of Alexandria. In modern times, this ancient

form has been used for an ingenious Christian monument. At the place where (721) the first church in Thuringia was founded by Boniface, the apostle of the Germans, only a few relics remaining

of the building, which had served for more than ten centuries as a Christian temple, a candelabrum, 30 feet high, formed of sand-stone, was erected (Sept. 1, 1811), as a symbol of the light which spread from this spot.

CANDI, or CANDY (anciently *Maagrannum*); a city of Ceylon, and capital of a country to which it gives name; 80 miles from Columbo; lon. 80° 44′ E.; lat. 7° 36′ N. The town is a poor, miserable place, surrounded by a mud wall. The kingdom is fertile, intersected with rivers, and well furnished with woods. It was annexed to the British dominions in 1816. See bishop Heber's *Narrative of a Journey through the Upper Provinces of India, &c., with Notes upon Ceylon*, vol. ii, p. 188, et seq.

CANDIA (in the Turkish language, *Kirid*, called, in the most ancient times, *Idæa*, from mount Ida, afterwards *Crete*), one of the most important islands of the Turkish empire, situated in the Mediterranean (lon. 23°′40′—26° 40′ E., and lat. 34° 50′—35° 55′ N., 81 miles from the southern extremity of the Morea, 92 from Rhodes, and 230 from the African coast), is 160 miles long, 14—50 broad, and contains 4026 square miles. A high chain of mountains, covered with forests, runs through the whole length of the island, in two ranges, the western part of which is called by the Venetians *Monte di Sphachia* (formerly *Leuce*); the eastern part, *Lasthi* or *Sethia* (formerly *Dicte*). On the north side, it declines moderately to a fertile coast, provided with good harbours; on the south side, steeply to a rocky shore, with few roadsteads; and reaches its greatest height in the lofty Psiloriti (the ancient *Ida*), 7670 feet high, and always covered with snow. Mountain torrents, which are swollen in the winter and spring, but almost dry in summer, conduct the waters to the sea. Numerous springs give fertility to most of the valleys, in which, and on the declivities of the mountains, is seen a luxuriant vegetation. The air is mild; the summer is cooled by the north winds; the winter is distinguished only by showers of rain. The island would, therefore, be a most delightful residence, and supply its inhabitants, as formerly, with grain, wine, and oil, wool, flax, silk, and cotton, fish, honey, game, cattle, the noblest fruits of the south, and even with metals, in abundance, did not the oppressions and cruelties of the Turks prevent all cultivation, and render it impossible for the discouraged inhabitants (who, instead of being 1,200,000, as in the time of the Greeks, or 900,000, as in the time of the Venetians, amount only to 300,000, half Greeks, half Turks) to attain more than the most indispensable necessaries of life. Manufactures, trade, navigation, the arts, sciences, are not to be thought of. All the harbours, with the exception of that of Canea, are filled with sand, and the cities are mere aggregations of rubbish. The capital, Candia, the seat of the pacha, has 15,000 inhabitants; Retimo, 6000; Canea, (the ancient *Cydonia*,) the most important place of trade on the island, 12,000.

According to Homer, king Idomeneus sailed from this island to Ilium, with 80 vessels. The Greek mythology made Crete the scene of many of the adventures of the gods and heroes. Here Saturn reigned, and afterwards Minos, 1300 years before Christ. After the banishment of the kings, Crete became a republic, and then a seat of the Cilician pirates, till it was conquered by the Romans. In the year 823, it passed from the hands of the Roman emperors in the East into those of the Saracens, who built the capital, Candia, on the ruins of Heraclea, but were expelled again, in 962, by the Greeks. Against the will of the inhabitants, the Byzantine sovereign sold the island to the Venetians in 1204, who, aware of its importance, fortified most of the cities, won the good will of their new subjects by a mild government, and repelled all the assaults of the Genoese and Turks till the middle of the seventeenth century. About this time, the attacks of the Turks became more violent, on account of a prize taken by the Maltese, on board of which was the aga of the eunuchs, and, according to a report then very generally spread throughout Europe, the favourite wife and son of the sultan Ibrahim, but probably only a slave of the aga, who had been employed in the seraglio as a nurse, with her son, to whom, however, the sultan was much attached. This vessel was carried, for a short time, into Calismene, a harbour of Candia, without, however, the consent of the Venetians, who had no garrison there. The sultan was highly incensed, ascribed all the fault to the Venetians, and landed a large force in Candia, in June 1645, which soon took Canea and Retimo, and besieged the capital with vigour. The attack was bravely repelled, but repeated in 1649; and was this time also unsuccessful. In 1656, the Turks made a third effort, but afterwards changed the siege into a blockade, which they continued for 10 years, without success, since the Venetians, being masters of the sea, supplied the fortress, without difficulty, with provisions, men, and ammunition. In 1667, after the peace of Vasvar, the grand vizier, Kiopurli, in order to restore his reputation, which had been tarnished by the loss of the battle of St Gothard, and to regain the favour of Mohammed IV. by an important conquest, took vigorous measures for the entire reduction of Candia, investing the capital, May 14th, with 80,000 men. A wall with seven bastions surrounded the fortress; the same number of ravelins were situated in front of the wall, and several detached works still farther in advance: a numerous fleet held the Turks in check by sea, and the garrison, commanded by the chevalier de Ville and Morosini, was ready to be buried under the ruins of the fortress. The attack of the Turks was directed against the bastion called *Panigra*. The Christians contested every step of their advance; but the Turks were soon at the foot of a breach, which was, however, so well defended by mines, sallies, and intrenchments, that the most furious assaults, directed by Kiopurli in person, who feared the displeasure of his master, were without success. The winter found the Turks still before the breach, and compelled them to withdraw to their intrenchments. The natives of the East, unaccustomed to a winter campaign, were carried off by sickness; and new masses of troops, with all the materials for a siege, supplied the loss. Changes occurred also in the fortress. In the spring of 1668, the brave chevalier de Ville was recalled, on account of the jealousy of his superiors, and a quarrel with Morosini. His place, however, was well supplied by the chevalier St Andre Montbrun. Volunteers likewise poured in from all the countries of Europe, to display their courage on so bloody a field, and to learn the art of war. Numerous engineers made the place their school, and Werthmuller, Rimpler, and Vauban, were together here. The pope sent troops and money; the Maltese, knights and soldiers. The duke de la Feuillade led hither 600 Frenchmen, some of them of the noblest families, who, with French thoughtlessness, rushed into heedless danger, and were, for the most part, destroyed. The count of Waldeck subsequently came with three regiments of Lunenburg troops, so that the garrison was always kept from 8000 to 10,000 strong. Treachery had given the Turks information that the bastions of St André and Sabionetta were the weakest points of the fortress: they therefore altered their plan, and attacked the last mentioned works. Departing from the line of operations which they had

hitherto followed, they approached the fortress by employing a great number of men in digging a deep ditch, throwing up the earth towards the place, and continuing to move it forward with shovels, till they reached and filled the trench. Daring sallies and well-applied mines, however, kept the Turks in check for a long time, and often destroyed their works; but, having finally succeeded in establishing themselves on the bastion of St André, they found beyond it strong intrenchments, which withstood the most violent assaults; and the approach of winter found the besiegers no farther advanced. In the spring of 1669, the Turks pursued their labours slowly, but surely and successfully. In a short time, nothing but a heap of earth and stones remained to the Venetians of the bastion of St André, and their last defence was a wall, thrown up during the winter, as a general intrenchment. In this extremity, the dukes of Beaufort and Navailles appeared with a French fleet and 7000 troops. A desperate sally was undertaken with this new reinforcement. A mine, which was to serve as a signal, and throw the Turks into confusion, did not explode: on the contrary, a Turkish powder magazine blew up when the French had already got possession of the trenches, and repelled an attempt of the Turks to recover them. This explosion filled the French with such a fear of concealed mines, that they fled in disorder to the fortress, and left 200 men dead on the field, among whom were many brave officers, and the duke of Beaufort. At the same time, the Christian fleet, consisting of 80 ships and 50 galleys, which were to attack the Turkish camp in the flank, was thrown into disorder by the batteries on the coast, and the blowing up of a ship of 70 guns, and the sally was entirely unsuccessful. This misfortune increased the discord which already existed to such a degree, that the duke of Navailles, convinced that the preservation of the fortress was impossible, reembarked his corps, and returned to France. Individuals belonging to the other troops joined the French; the Maltese, and almost all the volunteers, also, departed shortly after; a new assault of the Turks was more successful than the previous ones, and brought them to the palisades of the last intrenchment; the garrison, amounting to scarcely 3000 men, was desponding and disobedient; quarrels distracted the commanders, and every thing announced that the place must fall at the next assault. It was resolved, therefore, in a council of war, to surrender. The terms of capitulation gave the garrison and inhabitants liberty to depart within 12 days, and to take with them all their property, even the artillery which had been introduced into the city during the siege, and left the Venetians in possession of Suda, Garabusa, and Spinalonga. Sept. 27, 1669, the city was surrendered, after a war of 25 years, a blockade of 13 years, and a siege, in which the trenches had been open 2 years, 3 months, and 27 days. Its defence must serve as a model to the latest ages, as one of the bravest recorded in history, and proves what Christian courage could effect against Turkish fury and superiority of numbers, even at a time when the European art of war was imperfect, and the Turkish empire was at the zenith of its prosperity. At the time of the capitulation, the garrison consisted of only 2500 soldiers. 30,985 Christians, and 118,754 Turks were killed or wounded during the siege; 56 assaults were made by the Turks; 96 sallies by the Christians; 472 mines were sprung by the former, 1173 by the latter; 509,692 cannon shot were fired by the fortress, and 180,000 cwt. of lead used for musket balls by the Christians. The Turks found the city in a ruinous state; every thing of any value was taken away; only 33 men, for the most part far advanced in years, remained behind, and 350 miserable cannon stood on the walls. The Turks immediately repaired all the works. Having obtained possession of the capital, they now endeavoured to expel the Venetians from the strongholds which remained to them on the island; and, before the expiration of the 17th century, Garabusa fell into their power by treachery, and Suda and Spinalonga by surrender. They managed Candia in the usual manner. Three pachas, at Candia, Canea, and Retimo, governed the island. On account of the feuds of these pachas, the inhabitants of the western mountains succeeded in forming a government of their own, under Turkish protection, in the agalic of Sphachia. As the compacts made with them were not always observed, they were wont, in such cases, to take up arms, were often defeated, but never entirely subdued. The pachas having demanded hostages of them in 1821, they joined the Greek insurgents. Even under the Venetian government, the Candiotes had the reputation of suffering no infringement of their privileges, and would not permit the Venetians to establish, as in the other districts of Greece, a nobility, *degli possidenti*, by whose means they might hold the other inhabitants under the yoke of the *podestas*. Had the mountaineers been armed, when the Turks made their first descent on the island, it would probably have been impossible for the invaders to have maintained themselves in Candia. The Sphachiotes have played the same part in Candia as the Mainotes in the Morea, excepting that they have not escaped the tribute of the poll-tax. The energy of the inhabitants seems to be now relaxed. (See *Greek Insurrection.*) The historical importance of ancient Crete, in a mythological point of view, and as a seat of ancient civilization, is shown by Hock's *Kreta* (Gott., 1823). In 1817, F. W. Sieber, a German physician, penetrated far into Crete and made many observations on it, which had principally in view the improvement of natural history and medical science. See his *Reise nach der Insel Kreta* —Voyage to the Island of Crete (Leips. 1823), 2 vols. with plates and a map.

CANDIDATE (from the Latin *candidatus*, *white-robed*, because, among the Romans, a man who solicited an office appeared in a shining white garment—*toga candida*). The *candidati* of the Romans wore no tunic; either as a sign of humility, or in order to show the wounds received on their breasts. The time of their canvassing was two years, during which they wore the *toga candida*. In the first year, they delivered speeches to the people, or had them delivered by others, with the consent of the magistrates. This was called *profiteri nomen suum*, and the year, *annus professionis*. After this year, they requested the magistrate to enter their names on the list of candidates for the office sought for. An aspirant was seldom refused permission to deliver his speeches; but he was not yet necessarily treated as a candidate by the magistrates, or proposed by them to the people on the day of election. Before that was done, his life was subjected to a scrutiny in the senate, after the pretor or consul had received his name. If the senate accepted him, he was permitted to offer himself, on the day of election, as a candidate. The formula, by which permission was granted, was, *rationem habebo, renuntiabo;* if he was not accepted, he received the answer *rationem non habebo; non renuntiabo.* The tribunes often opposed a candidate who had been accepted by the senate. The morals of the aspirants, in the purer ages of the republic, were always severely examined. In the later period of the republic, nobody could obtain an office if he was not present, and if he had not offered himself on three market-days. (Sall. Cat. 18, Cic. Fam. xvi. 12.) On these days, the candidates tried to insinuate

themselves into the favour of the people. They went from house to house (*ambiendo*), shook hands with every body whom they met (*prensando*), addressed each one by his name, for which purpose they generally had a *nomenclator* with them, who whispered the names of those whom they met into their ear. Cicero, therefore, calls the candidates *natio officiosissima*. They placed themselves, on market-days, in elevated places, in order to be seen. On the day of election, they did the same. Favourites of the people accompanied them (*deductores*); some of their suite (*divisores*) distributed money among the people, which, though prohibited, was done publicly. *Interpretes* were employed to bargain with the people, and the money was deposited in the hands of *sequestres*. Sometimes a number of candidates united into parties (*coitiones*), in order to defeat the endeavours of the others. At last, the grounds on which each candidate rested his claims to the office were read, and the *tribes* delivered their votes. The successful candidate then sacrificed to the gods in the capitol. To oppose a candidate was called *ei refragari;* to support him, *suffragari*, or *suffragatores esse*.—We have dwelt so long on this subject, on account of the similarity between the ancient and the modern modes of seeking office.—The word *candidate* is also used, by Protestants, to designate a theologian, who, having finished his studies at a university, is waiting for an appointment in the church.

CANDIDE; the name of a famous tale of Voltaire's, forming an epoch in French literature, in which he ridicules the system of optimism with his usual spirit, and attacks revelation with plausible but superficial arguments. Voltaire is unsurpassed in the art of treating the most serious subjects with light raillery, while he seduces the reader by the charms of his style. Some descriptions in this tale, for instance, that of the carnival at Venice, are excellent.

CANDLEMAS; a Catholic feast, instituted by pope Gelasius I., in 492, in commemoration of the presentation of Christ in the temple, and of the purification of Mary; perhaps intended to take the place of the rude heathen feast called the *Lupercalia*, which was abolished by him. It is celebrated on February 2, and has its name from the consecrated torches which are carried about in procession, in allusion to the words of Simeon, "a light to enlighten the Gentiles."

CANE. See *Bamboo* and *Ratan*.

CANEA; the principal port of Candia; lat. 35° 28′ 45″ N.; lon. 24° 12′ 45″ E.; supposed to be on the site of the ancient Cydonia. Population, 7150. The city has been fortified from the time of the Venetian government.

CANGE, DU. See *Du Fresne*.

CANISIUS, Petrus, born in 1524, at Nimeguen, was the first man in Germany who entered the order of the Jesuits, of which he became a very active member. In 1549, he was made professor of theology, rector and vice-chancellor of the university at Ingolstadt. He afterwards reformed the university of Vienna, according to the views of the order. His catechism is yet in use. He persuaded Ferdinand I. to adopt violent measures against the Protestants, and founded the colleges at Prague, Augsburg, Dillingen, and Friburg, in Switzerland, in the latter of which he died, in 1597.

CANNÆ; a city in the Neapolitan province Puglia, at the mouth of the Aufidus, on the Adriatic, famous for the great battle in which the Romans were here defeated by Hannibal (216 B. C.). The consuls Æmilius Paulus and Terentius Varro contented themselves with acting on the defensive against the Carthaginian general, who endeavoured to decide the fate of Rome by one blow; but the senate, considering that the Roman army consisted of 87,000 men, while that of the enemy amounted only to 50,000, among whom were 10,000 horse, and would have no point of support when beaten, commanded the consuls to give battle. Hannibal, seeing that their plan was changed, allowed Varro to gain a slight advantage in a skirmish of cavalry. The Romans left their strong position at Canusium, on the banks of the Aufidus, and the whole army crossed the river. The consul Varro drew up his troops on the plain, with his right wing protected by the river. At the same time, Hannibal forded the Aufidus, and led his small army to the attack. The Romans had their own cavalry on the right wing, that of their allies on the left, and the infantry, as usual, in the centre. Hannibal opposed the Numidian cavalry to that of the Roman allies, and that of the Spaniards and Gauls to the Roman. His infantry from Africa he divided into two bodies, each of them near the cavalry. At some distance from both wings, the Spaniards and Gauls, on foot, arranged in an obtuse angle, occupied the centre. Behind them was a strong reserve. Hannibal himself commanded the centre. He had calculated that the wind called *Volturnus*, which blew regularly at certain hours in that country, would, at the time of attack, throw dust and sand in the eyes of the Romans, and hide his own evolutions. The consul, Æmilius Paulus, was wounded by a Balearian slinger, soon after the light troops had begun the engagement. The first shock of the Roman cavalry upon the Spaniards and Gauls was violent. After the fight had lasted for a long time, they alighted, and fought on foot. The Gauls and Spaniards then broke through the dismounted Romans, and cut them down. The Roman infantry, to assist their horse, moved in a curved line towards the wing, under very disadvantageous circumstances, and attacked the Spanish and Gallic infantry, which retired in good order into the intervals, as Hannibal had commanded. By this means, Hannibal was enabled to attack the Romans in flank, as they advanced incautiously, with the African infantry, which he had kept back for this purpose. Thus surrounded, and contracted into a small compass, the Romans fell in great numbers, among them the consul, Æmilius Paulus, and both the proconsuls, Servilius and Atilius. The Numidian horse destroyed those who fled from the field of battle. The victor made 13,000 prisoners. The Romans lost, according to their own lowest statements, 45,000 men; according to the highest, 70,000. Hannibal collected the gold rings of the knights who had fallen, and sent some bushels thereof to Carthage. But the victory had also weakened his own army. He was in want of money to recruit his troops. This want, rather than the short period of luxurious living in winter-quarters at Capua, obliged him, at length, to give up the hope of conquering Italy, after a war of 17 campaigns. See *Hannibal*.

CANNES, or CANES; a small seaport of France, on the shore of the Mediterranean, in the department of the Var; population, about 2800. Cannes is famous as the place where the memorable march of Napoleon through France began, when he returned from Elba. He landed here March 1, 1815.

CANNIBALS. See *Anthropophagi* and *Caribs*.

CANNING, George, a distinguished political adventurer, was born in London, April 11, 1770. His father, a man of considerable abilities and literary cultivation, had offended his family by marrying a lady of beauty and accomplishments, but without fortune, and died in 1771, leaving his widow destitute. She had recourse to the stage for support, but was not very successful, and was afterwards twice

married. Her second husband was an actor; her third, Mr Hunn, a liner-draper of Exeter. She lived to see the success of her son, from whom she ever received the tenderest marks of filial love. Canning, who had inherited a small estate in Ireland, was educated at Eton, where he was distinguished for industry, vigour of mind, and elegance of taste, and, at the age of 15, formed the plan of a periodical paper, called the *Microcosm*, of which he was the principal editor. In 1787, he was entered at Oxford. His vacations were passed with Sheridan, by whom he was introduced to Burke, Fox, and other distinguished whigs. But, although Sheridan had already announced him, in parliament, as the future ornament of his party, Canning entered into terms with Pitt, by whom he was brought into parliament in 1793. During the first session, he remained silent. His maiden effort was made in 1794, on the Sardinian treaty, and rather disappointed expectation. In 1794, he took the degree of M.A., and, from that time, resided constantly in London. In 1796, he was under-secretary of state. In 1797, he projected, with some of his friends, the Anti-Jacobin, or Weekly Examiner, of which Gifford was appointed editor. Canning contributed many poetical and other articles to this periodical. In 1798, he supported Wilberforce's motion for the abolition of the slave-trade, and continued always an advocate for the amelioration of the condition of the blacks. In July, 1800, Canning increased his fortune and influence by a marriage with Joanna, daughter of general Scott, a lady with a fortune of £100,000. The administration being dissolved in 1801, Canning became a member of the opposition, until the restoration of Pitt in 1804. In 1807, he was appointed secretary of state for foreign affairs in the Portland administration. A political misunderstanding with lord Castlereagh led to a duel between that minister and Canning, in which the latter was slightly wounded. This dispute occasioned the dissolution of the ministry. In 1810, he opposed the reference of the Catholic claims to the committee of the whole house, on the ground that no security or engagement had been offered by the Catholics. Some of his most brilliant speeches were on this subject. He invariably supported the admission of the Catholics to power, not as an abstract question of right, but as a matter of expediency —of hourly increasing expediency. The adoption of the measure being then a matter of policy, the state of opinion, the condition of affairs, and the securities with which it should be accompanied, were, with him, elements of the question. He proposed securities, in 1813, which, with the bill, were rejected. He supported, in 1812 and 1813, the same motion which he had opposed in 1810; and, in 1821, two bills in favour of the Catholics having been introduced into the house of commons, he observed, "that the moment was peculiarly favourable for discussion; that they were in possession of a peace achieved by Catholic arms, and cemented by Catholic blood." To Canning was principally owing the first blow which shook the throne of Napoleon; the British policy in Spain was directed and animated by him. "If there was any part of his political life," he declared, on one occasion, "in which he gloried, it was that, in the face of every difficulty, discouragement, and prophecy of failure, his had been the hand which had committed England to an alliance with Spain." "Never," said he, on another occasion, "ought we to relinquish our hold of the Peninsula. The ruler of France has one grand object, to which he stands pledged—the establishment of his dominion in the Peninsula. If he fail in this, his defeat must be most signal." In 1812, he was elected member of parliament for Liverpool; from which he was also returned in 1814, 1818 1820. In 1814, he was appointed minister to Portugal, and remained absent about two years. In 1819, he declared his decided hostility to parliamentary reform, in whatever shape; and his speech on Lord John Russell's motion for reform, in 1822, is among the most finished specimens of his eloquence. On the occasion of the proceedings relative to the queen, he declared, that "toward the object of that investigation, he felt an unaltered regard and affection;" and soon after resigned the presidency of the board of control, and went abroad. Having been nominated governor-general of India, he was on the point of embarking, when the death of the marquis of Londonderry called him to the cabinet as secretary for foreign affairs (Sept. 16, 1822). One of his earliest acts, in this situation, was to check the French influence in Spain; and, in a debate on this subject (April 28, 1823), he observed, "It is true that there is a contest going on in the world between the spirit of unlimited monarchy and the spirit of unlimited democracy. Between these two spirits there is a strife openly in action, or covertly at work, throughout the greater portion of Europe." It was in this session that Brougham accused him of "the most monstrous truckling which the whole history of political tergiversation could furnish." Canning rose immediately, and exclaimed, "That is false." The affair was settled, after some explanations on the part of Mr Brougham. He continued to support the propositions in favour of the Catholics, and, in 1825, communicated to foreign ministers the determination of his majesty to appoint *chargés d'affaires* to Colombia, Mexico, and Buenos Ayres. In consequence of the attempts made by Spain to assist the malcontents of Portugal, it was immediately determined, by the ministry, to support the regency of that country. On this occasion, Canning concluded his speech with these remarks: "Some years ago, I said that I feared that the next war, which should be kindled in Europe, would be a war of *opinions*. It is the contemplation of this *new power*, in any future war, which excites my most anxious apprehensions." And, in answer to the argument, that the ministers had encouraged the attack upon Portugal, by having permitted the occupation of Spain by France, he uttered the memorable words: "Was it necessary that we should blockade Cadiz? No. I looked another way; I resolved that if France had Spain, it should not be Spain with the Indies. I called the new world into existence, to redress the balance of the old." April 12, 1827, his appointment to be prime minister was announced. His administration was terminated by his death, the 8th of August following; but not until it had been crowned by the treaty of London (July 6), for the settlement of the affairs of Greece.

As an orator, Mr Canning was showy, graceful, and prepossessing, with a brilliant wit and caustic satire, though neither formed on a very masculine taste. He possessed, in a great degree, the art of a rhetorician—could, with a small stock of ideas, make a great appearance of intellectual resources, and could fill the ear without satisfying or informing the understanding. His pretension to general views was solely in words. In no case did he strike his own interests out of consideration. During his career, the leading domestic subjects on which the British parliament was called upon to legislate were the following: the liberty of the press, the emancipation of the Catholics, the test and corporation acts, the corn laws, and reform in parliament. Those of a foreign nature were, among others, the various overtures of peace between Britain and France, the settlement of Europe on the final overthrow of Napoleon, the treatment of Italy by the Austrians, the Spanish revolution, and recognition of the South American republics. On all these questions, with two exceptions, he invariably

supported the high tory side. The exceptions were, the emancipation of the Catholics, and the recognition of the South American republics. The former he advocated merely as a matter of expediency; for his support of the test and corporation acts showed how limited his views were regarding religious toleration. The latter was a showy parade, which brought eclat, without endangering his position; for Spain was a mere cypher, and the recognition could do no harm to any established privileges on this side of the Atlantic. On the whole, Mr Canning can only be characterized as a political adventurer, who attached himself in all cases to the strongest party, and whose rule of action throughout was self-aggrandisement. When, indeed, he obtained the premiership, his conduct gave indication of his being regulated by more lofty principles, but death speedily interfered with any expectations that were formed of him in that position.

CANNON; a heavy metallic gun, which is moved by the strength of men and horses. It is mounted on a carriage, and iron (formerly stone or leaden) balls are projected to a distance from it by the force of gunpowder. The interior of the cannon is called the *bore*. The solid piece of metal behind is named the *breech*, and terminates in the *button*. The *dolphins* (so called because they used to be made in the form of this animal) are the handles by which the piece is mounted or dismounted. The aperture through which the fire is introduced into the bore, to ignite the charge, is called the *vent* or *touch-hole*, in which a small tube, used to contain the priming, is placed previous to firing. The supports, which are denominated *carriages*, are mounted on trucks, as in the case of ship-guns or garrison-guns, or on two wheels, as in the case of field-pieces. When a field-piece is to be moved, a two-wheeled frame is fixed to the carriage, which is called a *limber*, and this process is called to *limber up*. The charge, or cartridge, is a bag filled with powder, carried near the cannon. The cannon is fired by means of the *match*, which is a lighted bunch of tow, wound round a small stick; or by a tube, filled with the priming-powder, from which a piece is broken off every time, and forced into a stick, to light the charge. On board most of the British ships there are cannon fired by means of locks. To perform the labour required in managing cannon is called to *serve the guns*. Cannon were formerly dignified with great names. Twelve, cast by Louis XII., were called after the 12 peers of France. Charles V. had 12, which he called the *Twelve apostles*. One at Bois le Duc is called the *Devil;* a 60 pounder, at Dover castle, is named *Queen Elizabeth's pocket-pistol;* an 80 pounder, at Berlin, is called the *Thunderer;* another at Malaga, the *Terrible;* two 60 pounders at Bremen, the *Messengers of bad news*. In the beginning of the 15th century, names of this sort were abolished, and the following came into general use: cannon royal, or carthoun, carrying 48 pounds; bastard cannon, or ¾ carthoun, 36; ½ carthoun, 24; whole culverins, 18; demi-culverins, 9; falcon, 6; saker, lowest sort, 5; ordinary, 6; largest sort, 8; basilisk, 48; serpentine, 4; aspick, 2; dragon, 6; siren, 60; falconet, 3, 2, and 1; moyens, which carried a ball of 10 or 12 ounces: rabinets carried one of 16 ounces. Cannons are, at present, named, from the weight of the balls which they carry, 6 *pounders*, 12 *pounders*, &c. The length of the cannon is in proportion to the *caliber*. Cannon took their name from the French word *canne* (a reed). Before their invention, machines were used for projecting missiles by mechanical force. These were imitated from the Arabs, and called *ingenia*; whence *engineer*. The first cannon were made of wood, wrapped in numerous folds of linen, and well secured by iron hoops. They were of a conical form, widest at the muzzle. Afterwards, they received a cylindrical shape. At length they were made of iron bars, firmly bound together, like casks, by iron hoops. In the second half of the 14th century, they were formed of an alloy of copper and tin, and, in process of time, other metals were added. Some attribute the invention of cannon to the Chinese, and say that there are now cannon in China, which were made in the 80th year of the Christian era. From the Chinese the Saracens probably learned to manufacture them, and Callinicus, a deserter from Heliopolis, in Phœnicia, made them known, in 670 (676), to the Greek emperor Constantinus Pogonatus. Bombards were brought into use in France in 1338, and, according to another and more doubtful authority, Solomon, king of Hungary, used them in 1073, at the siege of Belgrade. From all these accounts, it appears that the true epoch of the invention of cannon cannot be exactly determined: it is certain, however, that they were actually in use about the middle of the 14th century. In 1370, the people of Augsburg used cast cannon. In the beginning of the 15th century, nearly all the countries of Europe, except Russia, where cannon were first cast in 1475, were provided with them. The lead cannon, which were invented and employed by the Swedes, between 1620 and 1632, in the 30 years' war, were lined with tubes of wood or copper, and secured on the outside with iron rings. The art of firing red-hot balls from cannon was invented by major-general Weiler, of the electorate of Brandenburg. In the commencement of the 16th century, Maurice of Switzerland discovered a method of casting cannon whole, and boring them, so as to draw out the interior in a single piece. Arms for expeditious firing, loaded from behind, and having the charge closed in with a wedge, were introduced by Daniel Spekle (who died 1589) and Uffanus. Charles Millon invented a kind of air cannon, 2 feet long, 3 inches diameter in the thickest part, 12 lines caliber, charged with inflammable air, and fired with a Leyden jar, or a piece of cat-skin, by which 12 discharges can be made in a minute. It stands on a frame of glass, and may be directed to any point. In 1740, cannons were made of ice at St Petersburg, and balls of many pounds weight were projected without injuring the pieces. (See *Steam-Gun, Gun-Boat.*) *Cannon-clock* is a contrivance invented by one Rousseau, and placed in the garden of the *palais royal*, and in the Luxembourg at Paris. A burning-glass is fixed over the vent of a cannon, so that the sun's rays, at the moment of its passing the meridian, are concentrated, by the glass, on the priming, and the piece is fired. The burning-glass is regulated, for this purpose, every month. For the use of cannon in naval warfare, see *Ship*.

CANO, Alonzo or Alexis; a painter, sculptor, and architect. The variety and extent of his talents made him the Michael Angelo of Spain, whom he also resembled in his private character. He was born in 1608, at Grenada, studied in Seville, with Pacheco, and first made himself known by the statues which he executed for the great church of Lebrija. In his 24th year, he had acquired the fame of a great artist, and was (1638) appointed painter to the king. In this capacity, he executed several celebrated pictures, and was at the summit of his prosperity, when a dreadful event destroyed his happiness. His wife was one day found murdered, and his house plundered. Instead of a suspected Italian servant, who had fled, Cano himself, convicted of a connexion with another woman, was condemned by the judges as guilty of the murder. He was put to the torture; but his right arm was spared, from respect for his

talents. He bore the torture with silent fortitude. The king pardoned him. He became a priest, and was made a *racionero* (resident) of Grenada, where he passed the remainder of his life in a pious and exemplary manner, and died in 1676.

CANOBUS. See *Canopus*.

CANOE, also CANOA; the term generally used to designate the small vessels which uncivilized people, living near the water, use. In the East Indies, there is a kind of boat which goes by this name, sometimes from 40 to 50 feet long, and 5 or 6 broad. The North American Indians generally impel their canoes with paddles, which have a very large blade, and are managed perpendicularly. The canoes of Canada are of the most fragile texture, and of so little weight, that, in passing from one river to another, the boatmen carry them on their heads across their portages. They are mostly covered with bark, the pieces of which are sewed together with a kind of grass. This bark is generally not more than a quarter of an inch in thickness; yet, in these frail vessels, the Indians and Canadians do not hesitate to descend very dangerous rapids. The Esquimaux are exceedingly dexterous in the management of their canoes. These consist of a light, wooden frame, covered with seal-skins, sewed together with sinews. The skins are not only extended round the bottom and sides, but likewise over the top, forming a complete deck, and having only one opening to admit the Indian to his seat. To this hole a flat hoop, rising about four inches, is fitted, to which is fastened the surrounding skin. The paddle is about 10 feet long, light, and flat at each end. In the Esquimaux language, the canoe is called a *kaiak*, or *man's boat*, to distinguish it from *umiak*, the *woman's boat*, which latter is a large boat for transporting the women, with their families and possessions. The Greenlanders and Esquimaux use the same kind of canoes, and it is astonishing, when we consider their insignificant construction, at what a distance from the regions they commonly inhabit, these people, especially the former, are found in them. In the islands of the South sea, the natives have a double canoe, united by a strong platform, serving, in this way, as one vessel. Such a canoe is capable of carrying a number of persons, and a considerable lading. Captain Cook gives us a long account of the different kinds of canoes used in Otaheite.

CANON; a person who possesses a prebend, or revenue allotted for the performance of divine service in a cathedral or collegiate church.

CANON, in the arts. When art has succeeded in producing beautiful forms, the question arises, with what proportions beauty of form is united. Artists of genius first started this question, and imitators, inferior to them in talents, scrupulously followed their results, and naturally exalted some existing work into a model for every performance. Among the Greeks, the celebrated statuary Polycletus (q. v.) first instituted such inquiries; and, as he generally represented youthful, pleasing figures, it is probable that he fixed the standard of beauty in the youthful form. The canon (the model statue) of Polycletus was accordingly a statue, which was made principally for the purpose of showing the beautiful proportions of the human form in a youth just ripening into manhood. No copy of it is known to exist; the artist probably gave his model of proportion a quiet, simple attitude, without any strong, distinguishing marks. His successors imitated it without deviation. Polycletus was not the only Greek artist who pursued such investigations respecting the proportions of form. Euphranor, for instance (in the 10th Olympiad), is celebrated in the same way. Among the moderns, Durer and Leonardo da Vinci have devoted themselves to similar inquiries. See A. Hirt's *Abhandlung uber den Canon in der bildenden Kunst* in the *Abhandl. der Histor-philolog. Classe der konigl. Akad. der Wiss. in Berlin* (1814 and 1815), a table annexed to which gives the average proportions (ascertained by careful measurements) of the best ancient statues.

CANON, in music, signified, with the ancient Greeks, what now is called *monochord*. At present, it signifies a composition in which the several voices begin at fixed intervals, one after the other, and in which each successive voice sings the verse or the strain of the preceding one. In Italian, therefore, it is called *fuga di conseguenza;* in Latin, *canon perpetuus*, or continuous fugue; in German, *Kreis-fuge* (circulating fugue). Sometimes each voice begins with the same, sometimes with different notes. Canons may be finite or infinite. The former end, like any other compositions, with a cadence, while the infinite canon is so contrived, that the theme is begun again before the parts which follow are concluded. By this means, the performance might be continued to an indefinite length. A canon may consist of two, three, four, or more voices. Generally only one voice of a canon is written, and a sign shows the place where the other voices are to begin. Formerly, at the beginning of canons, it was the custom to place the directions by which they were to be deciphered and sung. These directions were called the *rule* or *canon*, and thence arises the title which such compositions have since retained. Canons differ from ordinary fugues; for, in the latter, it is sufficient that the subject be occasionally repeated and imitated according to the laws of counterpoint; but, in the former, it is essential that the subject be strictly repeated by all the succeeding parts; which repetition may be made in the unison or octave, the fourth, or the fifth, or any other interval of the scale. There are several other canons, as *canon polymorphus*, *canon pertonos*, *canon per diminutionem*, and *canon per augmentationem*, which to explain, would exceed our limits. Sometimes, also, a musical passage of a composition, in which one voice repeats, for a short tune, another, is called, improperly, a *canon*.

CANON (*Greek*); properly a measure, a rule, a standard; thence *canon* is used to denote the rule or standard of primitive Christianity. The same term is employed to designate the collection of books containing this rule; that is, the canonical books of the Holy Scriptures, whose divine origin the church acknowledges. The canon of the books of the Old Testament, as drawn up by the Jews in the 4th century before Christ (see *Hebrew Language and Literature*), receives in this form equal respect among all Christians, because Christ and the apostles have expressly appealed to them, and pronounced them writings inspired by God. The apocryphal books of the Old Testament, whose canonical character the Jews did not acknowledge, the Eastern church has never received; but the Western church declared them canonical, in the African council, about the end of the 4th century. Nevertheless, the opinions of the clergy respecting the canonical authority of the apocryphal books of the Old Testament remained for a long time divided. Jerome, one of the fathers of the church, denied it, and many theologians coincided with him. (*See the following article.*) The Protestant churches reject the Apocrypha as books not belonging to the rule of faith. Respecting the value and the number of the books belonging to the canon of the New Testament, the opinions of Christians were much divided till the 6th century. As early as the 2d century, the separation was made into the Evangelicon (the four evangelists) and the

Apostolicon (the Acts and Epistles of the Apostles). The five historical books, the Epistles of Paul, the First Epistle of Peter, and the First Epistle of John, were universally acknowledged to be genuine in the 3d century; hence Eusebius, in his Ecclesiastical History, written about A.D. 325, calls them *Homologomena*, (universally received). The other five Catholic Epistles (Second of Peter, Second and Third of John, Jude, and James) he calls *Antilegomena* (doubtful, not universally received). At that time, the Epistle to the Hebrews was considered genuine by most persons, and the Apocalypse by many. These books were received, in the second half of the 4th century, in the Egyptian church (where Athanasius first used the term *canonical*), and in the Western church. In the Eastern church, properly so called (the dioceses of the patriarchs of Constantinople, Antioch, and Jerusalem), only the Catholic Epistles were of canonical authority at that time; the Apocalypse not till the 6th century. The canon of the New Testament has since remained unaltered, and the Protestant churches hold it in common with the Greek and Catholic churches. The results of critical examinations of the genuineness and canonical character of the single books of the Bible, even when they were unfavourable to the books, have produced no alteration in the established canon. The reasons of the ancient fathers of the church for or against the canonical character of the Biblical books were merely historical and traditional, and built on philological criticism; they are still the most tenable and rational: the philosophical grounds are more subject to be affected by extraneous influences. Modern criticism has attacked, with success, the genuineness of single passages; but it has failed in its attempt to destroy the canonical authority of whole books. With respect to the Apocalypse, or Revelation of John, however, a large number of the Protestant commentators incline to the side of the assailants.

Canon is also the name of the prayers which the Catholic priests repeat before, at, and after the consecration of the host.

In Arithmetic, algebra, &c., *canon* denotes a formula obtained by the solution of a problem, and containing the rule by which all examples, comprehended under the general problem may be solved.

CANON OF THE HOLY SCRIPTURES [*written by a Catholic*]. * The distinguished characteristic of the Catholic religion, is the authority which it attributes to tradition, by which revelation continues in life and power. The Holy Scriptures are esteemed sacred by the Catholics, because the church has transmitted them from age to age as sacred, and illustrative of revelation, as far as any writings can be. The church has only declared what writings have been handed down as of divine origin. The catalogue of these Holy Scriptures is the canon; the writings themselves are called *Canonical Books*. In this sense, the Protestant church has no canon; it rejects the authority of all the traditions of the church. Hence, in order to be consistent, it must leave every Protestant, on free investigation, to decide what books he will regard as canonical. But the Bible, the pillar of the Protestant faith, is made up of separate canonical books; and, by pursuing such a course, the basis of the Protestant faith might be undermined. It has been agreed, therefore, however inconsistently, to adopt the New Testament canon of the Catholic church. But, in fixing the canon of the Old Testament, the decisions of the Catholic church have been rejected; and, contrary to the African councils and the usages of the Roman church, established by the council of Trent, part of Esther, also Baruch, Tobit, Judith, Wisdom, Ecclesiasticus or Jesus the Son of Sirach, the two books of Maccabees, the Song of the Three Youths in the Fiery Furnace, described in Daniel, together with the two last chapters of this prophet, are thrown out as uncanonical and apocryphal. It is worthy of mention, that a controversy on this subject broke off the negotiations for a union of the Catholic and Protestant churches, which commenced in the beginning of the 18th century, between Leibnitz, Molanus, and Bossuet.

CANON AND CAPUT IN COUNCILS. A council is not only the church universal assembled, which declares the faith of the members, and fixes the doctrines to be defended, but it also possesses the supreme power in the administration of all ecclesiastical affairs, which have not immediate reference to doctrines (as liturgies and rules of discipline). In the language of the church, a distinction is made between these two kinds of ordinances. Such as respect doctrine are called *canons;* and every other precept or regulation, *caput* or *decretum*. The latter are subject to be changed, as the spirit of the age requires, and hence lay no claim to infallibility: the former are the unalterable truths and doctrines of the infallible church of the Lord. The council of Trent makes a distinction between the two, and the *capita* on church discipline are superscribed *De Reformatione*. It would be a great mistake to view these *capita* as doctrinal truths, and then to reproach the church with establishing erroneous dogmas as truths essential to salvation.

CANON LAW [*written by a Catholic*]. The famous Gravina begins his Institutes of the canon law thus:—Since the word *law* is imperative, and includes the idea of physical enforcement, the ancient church preferred to apply to its precepts the milder term of *rule* or *canon* (from the Greek κάνων, rule), which agrees with the language of the council of Trent, and the most able canonists, as Van Espen, &c. Canons, therefore, are the laws which the church has promulgated; and by *canon law* in English, is understood the whole body of ecclesiastical laws, ordinances, and regulations. The church has been, from the time of its establishment, a free society, possessing and exercising the right of forming laws for itself, either by positive enactment, or by the gradual growth of custom. The regulations of the apostles, the decrees of the general and particular councils, and of the bishops, constitute these laws. Even when, after the downfall of paganism, the Christian church became connected with the state, it retained this legislative power. If the Theodosian code acquired authority, it was only in consequence of *reception*. The more the organization of the church became settled, the more frequent became the regulations and orders of the supreme bishop (the *decretals*). There is no question about the authority which was allowed to these decretals, and it is useless to inquire here whether this authority originated from positive enactment or from customary observance. The ecclesiastical as well as the political law, is to be traced, in part, to each of these sources. In the course of time, collections were made of these canons, arranged in chronological order (*Collectio Canonum*). These collections came into use in the fifth and sixth centuries. The chief basis of them was a translation of the decrees of the four first general councils, to which other decrees of particular synods and decretals of the popes were added. In the time of Charlemagne, the collection

* In the original 'Conversations Lexicon,' there are several articles so distinguished. In those cases where the Protestant view of the subject is also given, we think proper to retain them, because many readers may be justly desirous to see the tenets and doctrines of the Catholics stated by their own writers.—*Ed.*

of Dionysius the Little acquired almost the authority of laws. Equal authority also, was allowed to the collection of canons ascribed to Isidore, bishop of Seville, which appeared in the ninth century. This famous collection is falsely attributed to Isidore, and abounds in spurious interpolations. It was entitled the *Isidorian Code*, and is said to have been brought from Spain. The object of the interpolations of the *Pseudo-Isidore* was probably to give an historical basis to a system grown up out of observance, which transferred many of the former rights of the metropolitans to the pope. After the 10th century, the custom which had before prevailed, of collecting chronologically the ordinances of the church, and studying them from the sources, was given up, and systematical compendiums of ecclesiastical law began to be drawn from these canons. In these compendiums, it is true, literal extracts of the canons were retained, but often mutilated, and separated from their proper connexion. The most important of these compendiums is that of the Benedictine Gratian, of Chiusi, which he finished in 1151, in the convent of St Felix, at Bologna. Gratian treated the subjects of the canon law according to a system which he had formed himself, and under each division laid down principles, which he established by quotations from the original decrees. By means of these authorities, with additions of his own, he extended his principles further, and endeavoured to reconcile apparent contradictions in the law, or, where they could not be reconciled, to determine which part was binding. Hence the title of his work—*Concordantia Discordantium Canonum.* He divides the whole subject into three parts: in the first, he begins with a general essay on law, particularly ecclesiastical law, and treats of the officers of the church, their character, rights, duties, consecration, and share in the government of the church: the second part contains the system of the powers of the church, particularly of its jurisdiction and judicial processes: the third part embraces the rules respecting religious rites, the liturgy, the sacraments, &c. This new collection met with great success. Within 10 years after its appearance, the universities of Bologna and Paris had their professors of canon law, who taught from Gratian's work; and within a short time, it superseded all former chronological collections. As the civil law acquired authority in so many countries from the circumstance that it was taught in the universities, so the *Decretum Gratiani*, in the same way, became a code, and with more reason, since it expounded a law really existing; and what Gratian had added was, to a certain degree, considered as commentary. Any direct co-operation of the popes in elevating the *Decretum Gratiani* to the authority of a code has never been proved. This *Decretum*, however, is only the first part of the present *Corpus Juris Canonici.* After the appearance of the *Decretum*, new decrees of councils and new decretals were promulgated, which several authors collected into appendices. All these new collections pope Gregory IX. ordered to be put in order, which was done by the Dominican Raymond, of Pennaforte. The work was divided into five books. This authentic collection was finished in 1234, and sent to the universities of Bologna and Paris. It bears the name of *Decretales Gregorii Noni*, and has the authority of law. The later decretals and decrees of councils were collected by Boniface VIII., and published as the sixth book (*Liber Sextus*) of the Gregorian Decretals, in 1298. They have also the authority of laws. Pope Clement V. published, in 1313, a collection of his decrees, mostly issued at the council held at Vienne in France: they are also a part of the *Corpus Juris Canonici.* About the year 1340, the decretals of John XXII. were published; they are called *Extravagantes Johannis XXII.*; and, at a later period, the subsequent decretals, to the time of Sextus IV., who died in 1484, called *Extravagantes Communes*, appeared. These *Extravagantes* have not altogether the authority of law. Under pope Pius IV., a commission of 35 persons (the *correctores Romani*) was appointed to revise the *Decretum Gratiani.* The labour was continued under Pius V., and completed under Gregory XIII., and sanctioned by a bull of July 1, 1580. The later bulls have the force of law, if they concern a subject on which the pope has an unquestionable right to legislate, or as far as the secular government accepts them. The canon law, excepting some of its regulations, is in force in Germany, even in civil cases. Luther, it is well known, burned a copy of the canon law at Wittemberg, but the Protestant courts have continued to apply it, except where it disagrees with Protestant principles. The canons, even those of the general councils, which respect the discipline of the church, have no authority in the Gallican church, unless it is proved that they have been admitted as laws of the kingdom.

The celebrated declaration of the clergy of France, of 1682, is a series of very important canons. They are to be considered as *rules of the Gallican church and laws of the kingdom.* Many Catholics are willing to admit that there exist arbitrary canons in the ecclesiastical codes, as much as unconstitutional laws in civil governments. In this country, when the Catholic faith prevailed in it, there existed, besides the general canon law, the legatine and provincial constitutions; the former being laws enacted in national synods, held under the cardinals Otho and Othobon, legates from pope Gregory IX. and Clement IV., about the years 1220 and 1268; the latter being decrees of various provincial synods, under several archbishops of Canterbury. The authority of the canon law in England, since the reformation, depends upon the statute 25th Henry VIII., according to which the ecclesiastical laws were to be revised by the king and a commission of nobles and clergymen, and such as were not repugnant to the laws of the realm and the king's prerogative were to remain in force till so revised. This revision was never made. There are four species of courts in England, in which the canon law, as well as the civil, is, under different restrictions, permitted to be used: 1. the courts of the archbishops and bishops, and their derivative officers, usually called, in the English law, *courts Christian* (*curiæ Christianitatis*), or *ecclesiastical courts;* 2. the military courts; 3. the courts of admiralty; 4. the courts of the two universities. The reception of these laws in general, and the different degrees of their reception in these courts, are grounded entirely upon custom, corroborated, in the case of the universities, by acts of parliament. The courts of common law have a superintendence over these courts. An appeal lies from all of them to the king.

CANONICAL BOOKS. See *Canon* and *Apocryphal.*

CANONICAL HOURS are certain stated times of the day, devoted, more especially by the Roman church, to the offices of prayer and devotion, as matins, lauds, sixth, ninth, vespers. In England, the canonical hours are from 8 to 12 in the forenoon, before or after which marriage cannot be legally performed in any parish church.

CANONIZATION; a ceremony in the Roman church, by which deceased persons are declared saints. Alexander III., in 1170, pronounced it an exclusive privilege of the papal chair. This ceremony is one of the most solemn in the Roman church. The pope institutes a formal investigation of the qualifications of the deceased person recommended

for canonization, in which his manner of life and the genuineness of the miracles ascribed to him are strictly examined; and an *advocate of the devil*, as he is called, is appointed, to assail the memory of the candidate, but, of course, always loses his cause. If the examination is satisfactory, the pope pronounces the beatification (q. v.) of the candidate; but, in order to collect new proofs of his merits (e. g., of miracles performed by his relics), the actual canonization generally takes place many years afterwards; and then a day, usually the anniversary of the death of the new saint, is dedicated to his honour, his name is inserted in the *Canon* or the Litany of the Saints in the Mass (thence *canonization*), churches and altars are consecrated to him, and his remains are preserved as holy relics. The last instance of canonization occurred in 1803. See *Saints*.

CANOPUS, or CANOBUS, in Egyptian Antiquities, is the name given to large-bellied vessels, used formerly for preserving the water of the Nile fresh and fit for drinking. They were frequently made of basalt (as the fine canopus of green basalt in the villa Albani), and decorated with figures in relievo or paintings; or of costly white alabaster, like that in the Mus. Pio. Clementinum, with spiral flutings; or they were formed from black, burned clay. Under the shape of such a vessel, surmounted by a human head, connected also sometimes with serpents, and similar attributes, the Egyptians worshipped one of their beneficent deities. The city Canopus or Canobus, between Alexandria and the western mouth of the Nile, is said to have derived its name from this deity. The worship of Serapis was introduced, in the room of that of this rude idol, under the first Ptolemy. (See Part 1st of Creuzer's *Symbolik*, where representations of this idol are given. For information respecting the worship of the same, see Creuzer's *Dionysos*.) According to Eusebius, the spherical shape of the vessel was to express the universal nature, or the world. The human head upon it signified the all-enlivening spirit (*νους*), which was denoted also, in former times, by the figures of a ball and a serpent. According to Zoega (*Numi Ægyptii Imperatorii*, page 34), Canopus was the same as Knuph, which seems to come from the same root, and denotes the kind, protecting god. There are traces, in Italy, of the worship of this deity, in that country, in the time of Adrian.

CANOSA; a city in Lower Italy (*Terra di Bari*), famous for the tombs in its vicinity, near the field where Hannibal defeated the Romans. They are cut in rocks, on a hill. Vases of coarse, whitish clay have been found in them. In 1813, a beautiful burial-chamber was opened. It had a small antechamber, supported by pillars, and contained the corpse of a warrior in armour, with a helmet on his head, but one leg bare. The body crumbled to dust as soon as it was exposed to the exterior air. The wall of the apartment contained a fine *basso relievo*. A copper lamp and a number of beautiful vases were also found here. (See Millin's *Description des Tombeaux de Canosa ainsi que des Bas-reliefs, des Armures, et des Vases peints qui y ont été découverts en* 1813 (Paris, 1813, folio), with correct representations). The paintings upon the vases are the most important part of this discovery. They refer to the Greek-Italian mysteries of the oldest inhabitants.

CANOSA (near Reggio, in the duchy of Modena); a mountain castle, now in ruins. Adelheid, widow of King Lotharius, was besieged here, in 951, by Berenger II., when she offered her hand and the crown of Italy to Otho the Great, emperor of Germany. In the 11th century, Canosa belonged to Matilda, duchess of Tuscany, with whom Gregory VII. resided, in 1077, when he imposed a severe penance upon the excommunicated emperor Henry IV.

CANOVA, Antonio; the third sculptor of modern times, who has formed an epoch in Italian statuary. Michael Angelo Buonarotti was the first, Bernini the second. Canova may be considered as the restorer of the graceful and lovely style, and the founder of a new school, as far as it respects softness and delicacy of execution, and excellent handling of the marble. He was born, Nov. 1, 1757, at Possagno, in the Venetian territory. While a boy of 12 years old, he displayed his talents by modelling the figure of a lion in butter, which was placed on the table of Falieri, the *seigneur* of the place. The Falieri, father and son, sent him, therefore, as an apprentice, to a statuary in Bassano, where he acquired skill in the mechanical part of the art. His first work, executed in his 17th year, was an Eurydice, in soft marble, of half the natural size. He was now sent to the academy of Venice, where his proper study of the art commenced. He gained several prizes, and excited expectations which he more than equalled in the sequel. The first work, which he was commissioned to execute, was the statue of the marchese Poleni, of the natural size, for the city of Padua. Sir William Hamilton, British ambassador at Naples, was one of his earliest and most efficient patrons. In his 25th year, he finished the group of Dædalus and Icarus, of the natural size, in Carrara marble. It is remarkable as a juvenile work, but is only a faithful imitation of common nature. The senate of Venice sent him, in 1779, to Rome, with a salary of 300 ducats. Here the first fruit of his study was an Apollo crowning himself with laurel, three palms high, in marble. It is weak, and without character. Yet the artist, in this production, has advanced beyond the mere imitation of nature; and this statue is to be considered as his transition to the ideal. A group as large as life—Theseus sitting upon the slain Minotaur—was the first large work by which Canova made himself known in Rome (1783). It is one of his best works. Theseus has the character of a hero; and the forms show the study and style of the antiques. It was received with universal applause, and count Fries, in Vienna, purchased it. In 1783, Canova undertook the execution of the tomb of pope Clement XIV., in the church Degli Apostoli. He retained the usual style of composition, and only improved on the depraved taste of the school of Bernini. He next made the group of Cupid and Psyche, where he first displayed his own peculiar style, of which loveliness is a striking characteristic. The figures are exceedingly delicate and graceful; yet there is no point of view from which the countenances of both can be seen at the same time; besides, the wings of Cupid project disagreeably from the group, which presents too many interstices. About the same time, he executed the likeness of the young prince Czartoriski, in the character of Cupid. He was employed on a second public monument, the tomb of pope Clement XIII., in St Peter's. It was finished in 1792, and is distinguished by its colossal size and simple style. (See the engraving of Raphael Morghen.) The figure of Religion is objected to as stiff; the long rays, the huge cross, and the petty folds of the lower dress, give her a tasteless air. The Genius has more beauty of appearance than depth of expression. Meanwhile, the fame of the artist continually increased. He established, in the palace of the Venetian ambassador, a school for the benefit of young Venetians. His next works were a winged Cupid, standing; another group of Cupid and Psyche; a group of Venus and Adonis (in which the figure of the latter is particularly beautiful), for the Marchese Verio

in Naples; the tomb of the Venetian admiral Emo, for the republic of Venice. This is a combination of *basso-relievos*, with figures in full relief. Canova also made a very lovely Psyche, standing, half-dressed, with a butterfly in her left hand, which she holds by the wings with her right, and contemplates with a calm, smiling mien. He also modelled, at this time, many *basso-relievos*, mostly scenes from the life of Socrates, taken from ancient fable and history, which cannot all be called successful. Only one of these models, which represents the city of Padua as a sitting female figure, he executed in marble. A repentant Magdalen, of the natural size, belongs to the works in marble, in which he has carried the expression of the melting and the soft to the highest degree. The relaxing effect of repentance is expressed with great truth. His Hebe is a delightful figure. In an easy and animated attitude, the smiling goddess of youth hovers upon a cloud, pouring nectar, with her right hand, into a bowl, which she holds in her left. Both vessels, as well as the coronet of Hebe, and the edges of her garment, are gilt. Canova is fond of a variety of material, and often endeavours to give to his statues the effect of pictures. He repeated this and the preceding statue. He next displayed his talent for the tragical, in the raging Hercules hurling Lichas into the sea. The group is colossal, and Hercules somewhat larger than the Farnesian; but it makes a disagreeable impression, which proves that the genius of Canova was not adapted to such subjects. His representation of the two pugilists, Kreugas and Demoxenos, is much more successful. A standing group of Cupid and Psyche, which has been often repeated, was the triumph of his art. Psyche here appears again holding the butterfly. A Palamedes, subsequently executed by Canova, in marble, was overthrown, in the winter of 1805, by an inundation, and broken in pieces. In 1796 and 1797, Canova finished the model of the celebrated tomb of the late archduchess Christina of Austria, wife of duke Albert of Saxe-Teschen, which, in 1805, was placed in the church of the Augustines at Vienna. The design of it is original; for the first time, the great artist ventured to leave the common track. In 1797, he made the colossal model of a statue of the king of Naples, one of his finest works. In the beginning of the revolution, the *studio* of Canova was in great danger from the Jacobins; but the lovely Psyches, Hebes, and Cupids, softened the rage of the mob, and saved the work-shop of the artist, in the back part of which the royal colossus was concealed. This statue, 15 palms high, was executed in marble, in 1803. During the revolution of 1798 and 1799, Canova accompanied the senator prince Rezzonico on a journey through Germany. After his return, he remained for some time in the Venetian territory, and painted, for the church of his native village, Possagno, an altar-piece, in which are represented the dead Christ, the Maries, Nicodemus, and Joseph, and, on high, God the Father. He afterwards executed, in Rome, his Perseus with the head of Medusa, which, when the Apollo of Belvidere was carried to France, occupied its place and pedestal. This statue increased the fame of Canova more than any of the preceding works. But Perseus has no decided character. It is only an imitation of the Apollo. The separate parts are of exquisite beauty in form, as well as in masterly, delicate finishing. The magical charm of the finish dazzles the eye, and makes us often forget the more severe forms of the art. Far less successful is the *Mars pacifer*, of equal size. In 1802, Canova was made, by Pius VII., superintendent of the Roman works of art, and knight of the Golden Spur. In the same year, he was invited by Bonaparte to Paris, to make the model of his colossal statue In the beginning of 1803, the model of the emperor's bust, and afterwards that of his colossal statue, was to be seen in the workshop of the artist. It is impossible to conceive a more characteristic likeness, exhibiting, at the same time, the ideal character of the ancient heroic style. We have not a more successful work of the kind than this bust: the figure of the statue is not so good. George IV. presented the latter to the duke of Wellington. The statue of madame Lætitia Bonaparte was purchased, in 1819, in Paris, by the duke of Devonshire, for 36,000 francs. Among the later works of the artist are a Washington, of colossal size, in a sitting attitude, now in the state-house at Raleigh, the seat of government of North Carolina; the tombs of the cardinal of York and of Pius VII.; the busts of Pius VII. and of Francis II.; an imitation of the Medicean Venus; a Venus rising from the bath; a portrait statue, lying, half-dressed, upon a couch; the tomb of the late engraver Volpato; the colossal group of Theseus killing the Minotaur, far surpassing his earlier works in the heroic style; the tomb of Alfieri, for the countess of Stolberg, in Florence, and erected in that place (the weeping Italia, a colossal statue in marble, is particularly admired); the Graces rising from the bath; the monument of the marchioness of S. Croce; a colossal *basso-relievo*, in marble; a Venus; a dancing girl, with almost transparent garments; the portrait statue of the wife of Lucien Bonaparte, with the lyre in her arms; a large marble statue, with beautiful drapery; a colossal Hector; a Paris; a Muse, larger than the natural size; a model of a colossal Ajax; and the model of a sitting statue, in rich robes, of the archduchess Maria Louisa of Austria. After the second fall of Napoleon, in 1815, Canova was commissioned, by the pope, to demand the restoration of the works of art carried from Rome; went from Paris to London, and returned to Rome in 1816, where Pius VII. inscribed his name in the golden book of the capitol, declared him "to have deserved well of the city of Rome," and made him marquis of Ischia, with a pension of 3000 scudi. Canova died at Venice, Oct. 13, 1822.

In his manner of treating the marble, a particular endeavour to produce the appearance of the greatest softness is visible. Not satisfied with giving to the surface of the marble the most delicate finish, by means of the rasp and the pumice-stone, he has invented a corrosive colour, of a yellowish hue, and prepared with soot, which he applies, after the last polish, in order to break the dazzling white of the marble, and to give it the soft, mellow appearance of ivory or wax. This excessive refinement in finishing is more attractive to amateurs than to true connoisseurs. Canova used to make his models first of a small size, in wax, then in clay, of the same size as the work was to be. From this last a cast was taken in gypsum. The first shaping of the marble from the cast he left to skilful workmen.

As a man, Canova was respectable and amiable. He was active, open, mild, obliging, and kind towards everybody. He had neither the pride nor the envy of an artist. His opinion of himself was very modest, notwithstanding his fame was spread through all Europe. He was not only disinterested, but animated by the noblest benevolence. He assisted promising young artists, and established prizes for the encouragement of the arts. When the pope conferred upon him the title of marquis of Ischia, with an estate producing 3000 piastres of rent, he dedicated the whole of it to the support and encouragement of poor and deserving artists. In short, his moral character was so excellent, that, even among his many rivals, there is but one voice respecting his worth as a man. His last work was a large group, the prin-

cipal figure of which represents Religion victorious. It was intended to be placed in Rome, as a monument commemorative of late events, the expense to be defrayed by a subscription in England. Canova was also an agreeable painter, but, strangely enough, more of a colourist than a correct designer. (See the *Life of Canova*, by Missinini; 4 vols., Prato, 1824; also, the *Biografia*, by the count Cicognara; Venice, 1823). Engraved representations of all his works have appeared in Italy and at Paris.

CANSTEIN (Charles Hildebrand, von), founder of a famous establishment for printing Bibles, which goes under his name, was born in 1667, at Lindenberg, in Germany, studied at Frankfort on the Oder, travelled much in Europe, went, in 1688, to Berlin, where he was appointed page of the elector of Brandenburg, and served as a volunteer in the Netherlands. A dangerous sickness obliged him to leave the military service. He went to Halle, where he became familiarly acquainted with Spencer. His wish to spread the Bible among the poor led him to form the idea of printing it with stereotype plates. Thus originated the famous institution, called, in German, *Die Cansteinsche Bibelanstalt*, of which we shall speak more in the article *Franke*. Canstein published some works, wrote the life of Spencer, and died in 1719, in Halle, leaving to the great orphan asylum his library and a part of his fortune.

CANT TIMBERS, in ship-building; those timbers which are situated at the two ends of a ship. They derive their name from being *canted*, or raised obliquely from the keel, in contradistinction from those the planes of which are perpendicular to it.

CANTABILE; a term applied to movements intended to be performed in a graceful, elegant, and melodious style.

CANTABRI; the rudest and most valiant of all the Iberian tribes, who dwelt in the ancient *Hispania Tarraconensis*, and inhabited the greater part of what is now La Montana, and the north-west part of the present province Burgos. In ancient history, *Cantabri* is generally used to denote all the inhabitants of the northern mountains of Spain. *Cantabria* is the name which was given to the country they inhabited.—*Oceanus Cantabricus* is the ancient name of the Bay of Biscay.

CANTACUZENUS, John, a Byzantine emperor and historian, was born in 1295. While minister of Andronicus III., he negotiated a favourable peace with the Genoese in 1336, and repelled the encroachments of the Turks in 1337. On the death of Andronicus in 1341, Cantacuzenus became regent during the minority of the young emperor, John Palæologus. He defeated the Bulgarians and Turks, assumed the diadem, and entered Constantinople, victorious over his rivals, in 1346. He used his power with moderation, and endeavoured to heal the wounds which five years of civil war had inflicted on the state; but religious disputes, civil dissensions, and foreign enemies, soon disturbed his government; and the jealousy of Palæologus, the rebellion of his own son, war, plague, the frightful disorders which prevailed in the empire, and his own loss of popular favour, induced him to renounce the crown. He retired to a monastery (1355), where he employed himself in literary labours. He is considered one of the greatest among the successors of Constantine. His Four Books of Byzantine History were printed in 1645 (Paris, 3 vols., folio), and belong to the collection of the Byzantine historians. His other works, principally theological, are partly printed and partly in manuscript.

CANTAL; a chain of mountains in Upper Auvergne, France, the highest peak of which, called *le plomb de Cantal*, is said to be nearly 6000 feet above the level of the sea. They give name to a department. See *Department*.

CANTATA; an elegant and passionate species of vocal composition, consisting of an intermixture of air and recitative. It was invented by Barbara Strozzi, a Venetian lady, who flourished about the middle of the 17th century, and was at one time extended to such length as to form a little opera, but has since been cultivated in Italy, Germany, and England, only as chamber music.

CANTEEN (from the French *cantine*, Spanish *cantina*) signifies both a bottle-case and a tavern for soldiers. In military language, it denotes a little coffer divided into minute partitions for holding an officer's eating utensils; likewise, a semi-cylindric tin case, carried over a soldier's knapsack, to hold his cooked victuals in; also a vessel to hold the ration of spirits or wine served out to the British troops when employed abroad.—*Canteen*, moreover, signifies a public-house, licensed in British barracks or forts, to sell liquors and tobacco to the soldiers.

CANTEMIR, Demetrius, was born in Moldavia, in 1673. At the age of fifteen, he was sent as a hostage to Constantinople, where he remained four years. He served his first campaign in 1692, under his father, upon whose death, in the succeeding year, he was chosen prince of Moldavia, at the age of twenty. This choice was not confirmed by the Porte, and he was ordered to reside at Constantinople, where his abilities soon gained him the favour of the government; and he was twice nominated hospodar of Moldavia. He successfully used his influence to transfer that dignity to his brother. He was appointed the third time, in 1710, with the promise of the annexation of Wallachia, and exemption from tribute. Notwithstanding this promise, as soon as he was invested with his office, he was called upon for the amount usually paid on such occasions. He entered, therefore, into a treaty with the czar Peter, by the terms of which the principality was to be hereditary in the family of Cantemir, under the protection of the czar, whom Cantemir was to assist in his war with Turkey. The czar, however, being abandoned by the Poles and betrayed by the Moldavians, was obliged to retire, and Cantemir took refuge in his dominions, with the rank of prince of the Russian empire. He died at Astracan, in 1723. Cantemir spoke eight languages, and understood the ancient Greek, French, and Sclavonian. He was a member of the academy of Berlin. His principal work is called History of the Growth and Decay of the Ottoman Empire (in Latin). It has been translated into English (London, 1734, 2 vols., folio), French, and German. He is the author, likewise, of the Present State of Moldavia (in Latin), and the System of the Mohammedan Religion, which have both been published. His other works are in MS.

CANTERBURY, the capital of the county of Kent, is situated 55 miles S.E. from London. It is supposed to have been a place of importance before the Roman invasion, the Roman name *Durovernum* being clearly latinized from the British prefix *Dwr*, water, although antiquaries much differ as to the remainder of the compound. Druidical remains have also been often found here, together with the British weapons termed Celts. Its importance under the Roman dominion is proved by many circumstances; and especially by the discovery of a great variety of remains of that people; added to which, Roman bricks have been found in certain portions of the remaining walls. It derives its present name from the Saxon appellation of *Cant-wara-byrg*, the Kentishman's city. During the residence of Ethelbert, king

of Kent, the memorable arrival of St Augustin took place in 596; an event which, through the influence of his queen Bertha, was rapidly followed by the conversion of this king and his people to Christianity; and the foundation of the archiepiscopal see of Canterbury. In the eighth, ninth, tenth, and eleventh centuries, the city was dreadfully ravaged by the Danes, and on one occasion, in 1011, with such brutal ferocity, that nearly the whole of the inhabitants, including women, children, and the archbishop himself, were barbarously massacred, and the cathedral burnt to its bare walls. It gradually, however, recovered, and at the conquest, its buildings exceeded in extent those of London. The ecclesiastical importance of the place, in particular, advanced with great rapidity, which was consummated by the murder of Thomas à Becket, whose politic canonization by the pope rendered Canterbury the resort of pilgrims from every part of Europe. Not only were the priory and see benefited by the offerings of the rich devotees, but the prosperity of the town itself was greatly advanced by the money spent in it by so many wealthy strangers. Erasmus describes the church, and especially the chapel in which he was interred, as glittering with the gold and jewels offered up by the princes, nobles, and wealthy visitors of his shrine; all of which Henry VIII. appropriated to himself on the dissolution of the priory in 1539, when he ordered the bones of Becket to be burnt to ashes. Several of the English monarchs have made a temporary residence at Canterbury, which was also occupied by Oliver Cromwell in the civil wars, whose troopers made a stable of the cathedral.

Canterbury is of an oval shape, and the four principal streets are disposed in the form of a cross, with a great number of smaller streets, lanes, and alleys. It has been considerably improved within the last half-century, especially as respects paving, watching, lighting, and the removal of cumbrous projections and signs. The culture of hops being carried on all round the city, it is rendered one of the first hop-markets in England; it has also been celebrated from time immemorial for the excellence of its brawn. Much business arises from its situation on the high road to France, which has induced many Jews to settle here, where they possess a synagogue.

The archbishop of Canterbury is primate, and metropolitan of all England, and deemed the first peer in the realm after the royal family. He places the crown on the sovereign's head at the coronation, and wherever the court may be, the king and queen are deemed his parishioners. The four prelates of London, Winchester, Lincoln, and Rochester, are respectively his provincial dean, subdean, chancellor, and chaplain. His province comprehends the sees of twenty-one suffragan bishops, and he has the nomination of the several officers belonging to the ecclesiastical courts, over which he presides, and the privilege of conferring degrees in the faculties of law, physic, and divinity. The present venerable cathedral is a repair and revival of that built by Lanfranc, the first primate after the conquest, the whole of which was nearly destroyed by fire in 1174. It exhibits specimens of the style of every age from the Norman accession to the period of the dissolution of monasteries. Population in 1831, 14,463.

CANTHARIDES, or Spanish fly (in medicine); the name of a kind of fly, the *cantharis vesicatoria*, Geoffray; *meloe vesicatoria*, Lin.; *lytta vesicatoria*, Fab.; belonging to the family of the *trachelides*. They are very common in Spain, Italy, and France, where they are found in large families on the ash, lilac, viburnum, &c. Their body is from 6 to 10 lines long; the feelers are black, setaceous, composed of 12 articulations; the elytro long, flexible, of a shining, golden green, and the tarses of a deep brown. Their odour is strong, penetrating, peculiar, and unpleasant; their taste extremely acrid; their powder is of a brownish grey, intermixed with shining particles of a metallic green colour. According to Robiquet, they contain, with several other ingredients, a peculiar substance, called *cantharidin*. (q. v.) These insects are, of all the vesicating substances, those which are most commonly used. Their action is principally confined to the skin; however, their active principles may be absorbed, and cause serious accidents. The application of a blister is often followed by strangury, hæmaturia, priapism, &c. Taken internally, they act as the most energetic acrid poison; they produce irritation on the intestines, and especially affect the genito-urinary organs, which they stimulate violently. In certain disorders, they are administered in small doses, as powerful stimulants. The medicine is of a very dangerous character, and its use requires the greatest caution on the part of the physician. Several species of blistering fly are found in America, some of which are more powerful than the Spanish fly.

CANTHARIDIN, the vesicating principle of the *cantharides*, or Spanish fly, is white, in small, crystalline scales, insoluble in water and cold alcohol, soluble in ether, boiling oils, and alcohol, from which it precipitates by cooling. The vesicating properties could be extracted from cantharides by oil of turpentine, and probably a satisfactory ointment be prepared by merely evaporating the oil of turpentine at a moderate temperature. See *Cantharides*.

CANTICLES. See *Solomon, Song of*.

CANTIUM; an ancient territory in South Britain, whence the English word *Kent* is derived, supposed to have been the first district which received a colony from the continent. The situation of Cantium occasioned its being much frequented by the Romans, who generally took their way through it in their marches to and from the continent. Few places in Britain are more frequently mentioned by the Roman writers than Portus Rutupensis. Portus Dubris (now *Dover*), Durobrivæ and Durovernum (now *Rochester* and *Canterbury*) were also Roman towns and stations. Cantium, in the most perfect state of the Roman government, made a part of the province called *Flavia Cæsariensis*. See *Kent*.

CANTO FERMO; the name given to the ancient chants of the Roman Catholic church, which were adopted as standing melodies. These chants, until counterpoint was discovered, were unaccompanied, or only harmonized with octaves.

CANTO FIGURATO. This term was applied, by the old Christian Ecclesiastics to the *canto fermo* in its more cultivated state, when harmony began to assume modulation.

CANTON, the principal city of the Chinese province of the same name, otherwise called *Quang-tong*, or *Koan-ton*, is situate in 23° 7′ N. lat., and 113° 14′ E. lon., on the banks of the river Taho, which is here very wide. This city, distinguished for size, wealth, and a numerous population, is the only seaport in China open to the ships of Europe and America. The estimate of missionaries, that it contains 1,000,000 of inhabitants, is exaggerated. The number is probably nearer 750,000. The circuit of the walls; which are of a moderate height, is above nine miles. Only about a third part, however, of the space enclosed is covered with buildings; the rest is occupied with pleasure-gardens and fish-ponds. The neighbouring country is very charming, hilly towards the east, and presenting, in that quarter, a beautiful prospect. The houses are mostly of one story; but those of the mandarins and principal merchants are

high and well built. In every quarter of the town and the suburbs are seen temples and pagodas, containing the images of Chinese gods. The populous streets are long and narrow, paved with flat stones, and adorned at intervals with triumphal arches. Shops line the sides, and an unbroken range of piazza protects the occupants of the houses, as well as foot-passengers, from the rays of the sun. At night, the gates are closed, and bars are thrown across the entrances of the streets. The traders express themselves with sufficient fluency in the languages of their European and American customers, with whom they deal almost exclusively, selling them porcelain, lackered wares, &c. The Americans trade here to a greater extent than any other nation: next to them come the British. The greatest part of the silver which is carried from America to Europe, eventually circulates through China, by means of the ports of Canton and Batavia, to which large supplies of the productions of the empire are transmitted. The principal articles of export are tea, India ink, varnish, porcelain, rhubarb, silk, and nankeen. A company, consisting of twelve or thirteen merchants, called the *Cohong*, is established here, by order of the government, for the purpose of purchasing the cargoes of foreign ships, and supplying them with return cargoes of tea, raw silk, &c. This society interferes, undoubtedly, with private trade, but adds greatly to the security of the foreign dealer, as each member is answerable for all the rest. Carriages are not used here, but all burdens are transported on bamboo poles laid across the shoulders of men. All the inhabitants of distinction make use of litters. Chinese women are never seen in the streets, and Tartar women but seldom. The European factories, viz. the Dutch, French, Swedish, Danish, and British, are situated on a very commodious quay, on the bank of the river. Nearly a league from Canton is the *Boat-town*, which consists of about 40,000 barks of various kinds, arranged close to each other in regular rows, with passages between them, to allow other vessels to pass. In this manner they form a kind of floating city, the inhabitants of which have no other dwellings, and are prohibited by law from settling on shore. As this is the only emporium in the empire for foreign commerce, which is carried on not only by Europeans and Americans, but also to a great extent by the Chinese themselves, with almost all the ports of India and the eastern Archipelago, the number of vessels frequently seen in the river at once, is said to exceed 5000. An American paper, issued twice a month, called the *Canton Register*, has lately been established at Canton. The British and American commerce with Canton is very extensive. The British trade is divided into two branches: that carried on between China and Great Britain, or the Company's trade; and that carried on between China and the British possessions in India, which is chiefly in the hands of private individuals. The imports to China consist of woollens, copper, iron and lead, glass and earthenware, and jewellery. Since 1824–5, the East India Company have exported nothing from China except tea, (see *Tea Trade*). The trade between China and British India is of more value than the Company's trade between China and Great Britain. The chief article of import from India to Canton used to be cotton wool; but this branch of trade has lately declined, probably owing to large importations of manufactured cottons and twist from Great Britain. Opium is now the principal import. The following table gives the amount of imports from Canton into the ports of the United States, also the exports of domestic and foreign goods from the United States to Canton, from 1821 to 1827.

Year.	Imports.	Dom. Exp.	For. Exp.
1821,	3,111,951 dollars.	388,535 dollars.	3,902,025 dollars.
1822,	5,242,536	429,230	5,506,138
1823,	6,511,425	288,375	4,347,686
1824,	5,618,502	330,466	4,970,705
1825,	7,573,115	160,059	5,410,456
1826,	7,422,186	242,451	2,324,193
1827,	3,617,183	290,862	3,573,543

The climate of Canton is healthy, warm in summer, but pretty cold in winter. Provisions, including various luxuries, are abundant.

CANTYRE, or KINTYRE, the southern division of Argyleshire. *Mull of Kintyre*, the south promontory of the peninsula.

CANUTE I., king of England and Denmark, ascended the throne of both kingdoms, A.D. 1015. He was called the *Great*, on account of his power, as Alfred had been for his virtue. The barbarities committed by the Danes in England excited Ethelred II., the twelfth king of Saxon descent, to a bloody vengeance. In 1002, he caused all the Danes, women and children, to be massacred on the same day. The sister of Sweyn, then king of Denmark, he caused to be beheaded in his presence. Sweyn landed in England, and laid waste the country with fire and sword. Ethelred had escaped to Normandy. Sweyn died 1014, before he had time to confirm the Danish power in the island. This was accomplished, however, by his son and successor, Canute. He began his reign by devastating all the eastern coast of his new kingdom, and causing the English, who were given to his father as hostages, after he had cut off their noses and hands, to be drowned at Sandwich. He then received reinforcements from Denmark, and extended his ravages in the south of England. The valiant Edmund marched against him with an army, and, although he was several times overcome, through the treachery of Edric, his brother-in-law, he still maintained himself against Canute, so that the English and Danish nobles, weary of the long-continued contest, sought to bring about a division of England between the two princes. A solemn treaty secured to Canute the north of England, and to Edmund the south. But only a month after this contract, Edmund was assassinated by two chamberlains, hired by Edric; and Canute became master of all England. At a general assembly of the states, he induced false witnesses to affirm that Edmund had appointed him heir to his crown, to the prejudice of his two minor children. After the assembly had confirmed this settlement, Canute sent the two young princes to the king of Sweden, with the request that he would put them to death. The latter, however, sent them to Hungary, where they met with the kindest reception. Canute, who had begun his reign with barbarity and crime, afterwards became humane, and finally pious, and even superstitious. He commenced a more equitable administration, by punishing the English natives who had betrayed their king, and by causing Edric to be hanged, and thrown into the Thames. He restored the Saxon customs at a general assembly and insured to the Danes and Englishmen equal rights and equal protection of person and property, so that the horror which had been excited by his tyranny was changed into respect and gratitude. His power was confirmed by his marriage with Emma, Ethelred's widow. He now made two expeditions to the continent, one to conquer Sweden, and the other to reduce Norway. But the most powerful prince of his age was at length brought to feel the vanity of earthly greatness. He erected churches and monasteries, and even performed a pilgrimage to Rome, where he obtained important privileges for the schools of England. It was this spirit of piety that animated him, when, to confound his flatterers, he seated himself upon the strand, and commanded the waves to retire. As they advanced, and bathed his feet, Ca-

nute arose, and said, that He only was almighty, whom the ocean obeyed when he proclaimed, "Thus far shalt thou go, and no farther." His last expedition was against Malcolm, king of Scotland. He died four years after, A. D. 1036, at Shaftsbury. By his will, he left Norway to his eldest son, Sweyn; to the second, Harold, England; to the third, Hardicanute, Denmark.

CANZONA; a kind of lyric poem, of Provençal origin. It is found in the Italian poetry of the thirteenth century. At first, it was quite irregular, but was confined by Petrarch to more fixed and regular forms. Hence it is called *canzone Petrarchesca*: it is also called *canzone Toscana*, because it originated in Tuscany. It is divided into several stanzas, in which the nature and disposition of the verses, which are of eleven and seven syllables, and the place of the rhymes, are uniform. The canzona usually concludes with a stanza which is shorter than the others, and is called *ripresa*, *congedo*, *comiato*, signifying dismission or taking leave. With Petrarch, this is rarely wanting; in the elder poets, it is often omitted. It generally contains the poet's apostrophe to his song, bidding it farewell, &c. There are different kinds of canzonas, and different names are given to the different parts. The *canzona Anacreontica* is divided into small stanzas, consisting of short verses, with a regular disposition of the rhymes through all the stanzas. In the selection of his verse, however, and of the disposition of the rhymes which he will observe in his poem, the poet may follow his pleasure. Not only light, pleasing songs of love, gayety, and mirth, but poems on solemn and lofty subjects, and of an elevated dithyrambic strain, are included under this name. The latter subjects, however, are better adapted to the *canzona Pindarica*, which was first introduced into Italian poetry, in the sixteenth century, by Luigi Alamanni, and owes its perfection chiefly to Chiabrera. It is distinguished from that of Petrarch by a bolder flight, loftier ideas, greater freedom in the choice and disposition of the verses, and by the form of the stanzas, which is borrowed from the Greek chorus. The Pindaric canzonas are divided into *strophe*, *antistrophe*, and *epode*, and are called *canzona alla Greca*. Those divisions are sometimes called *ballata*, *contraballata*, and *stanza*; or *volta*, *rivolta*, and *stanza*; almost all of which signify the same as the Greek divisions: the Greek names are the most common. There is also the *canzona a ballo*, an old Italian poem, originally intended to be sung at a dance (*ballo*). It is called also *ballata*. It is not employed by the Italian poets later than the sixteenth century.

CANZONET, CANZONETTA (*poetry* and *music*); in Italian poetry, a canzona (q.v.), consisting of short verses, much in use with the poets of the fifteenth century. Rinuccini, and, after him, Chiabrera, have used it in modern times, and given it more grace. Canzonets are generally expressive of tender feelings. —In music, *canzonet* signifies a short song, in one, two, or three parts; but, in England, it is more generally applied to the two latter.

CAOUTCHOUC. This substance, improperly termed *elastic gum*, and more commonly, from its application to remove pencil-marks from paper, *India rubber*, is obtained from the milky juice of several plants, which are natives of the torrid zone. The chief of these are the *hævea Guianensis*, the *jatropha elastica*, and *urceola elastica*. Caoutchouc is brought principally from South America. This juice, obtained from incisions, is applied, in successive layers, over a mould of clay, and dried by exposure to the sun, and to the smoke from burning fuel. When perfectly dry, the mould is broken, leaving the caoutchouc in the form of a hollow ball. In its solid state, caoutchouc is of a close texture, distinctly fibrous, of a light brown colour, or sometimes nearly white. Its elasticity is such that it can be stretched to a great extent; and, on removing the stretching force, it recovers its original dimensions. Its softness and pliancy are increased by heat. Boiling water renders it so soft, that two slips, newly cut and pressed closely together, may be firmly united. By a greater heat, it is fused, and may, in that state, be applied, as proposed by Mr Aitkin, to the surface of steel instruments, which it will cover with a transparent film, that effectually preserves them from rust. It is insoluble in alcohol and in water. Sulphuric ether, when purified by washing in water, dissolves it; and, by evaporation, the caoutchouc may be recovered unchanged. Oil of turpentine softens it, and forms with it a sort of paste, that may be spread as a varnish, but is very long in drying. The fluid now commonly used to dissolve it is the purified naphtha from coal tar, which is, at the same time, a cheap and effectual solvent, and which does not change its properties. This solution is employed to give a thin covering of caoutchouc to cloth, which is thus rendered impervious to moisture. Caoutchouc is also readily soluble in cajeput oil.

Caoutchouc, from its softness, elasticity, and impermeability to water, is applied to the formation of catheters, bougies, and tubes for conveying gases. These are formed by twisting a slip of it round a rod, and causing the edges to adhere by pressure, when softened by maceration in warm water. It is also used for over-shoes; and its solution in oils forms a flexible varnish.

It was not until about the year 1736 that this very extraordinary natural production was made known in Europe. It is obtained by making incisions through the bark of the tree, chiefly in wet weather. From the wounds thus formed the juice flows abundantly. It is of a milky-white colour, and is conducted by a tube or leaf, supported by clay, into a vessel placed to receive it. Some writers assert that, on mere exposure to the air, it gradually hardens, and others, that it goes through a certain process for this purpose, which the Indians of South America keep a profound secret. It is usually brought to Europe in the form of pear-shaped bottles, which are formed by spreading the juice over a mould of clay, exposing it to a dense smoke, or to a fire, till it becomes so dry as not to stick to the fingers, when, by certain instruments of iron or wood, it is ornamented on the outside with various figures. This done, the clay in the inside is moistened with water, and picked out. India rubber is remarkable for the flexibility and elasticity which it acquires on attaining a solid state, and also for the numerous useful purposes to which it is capable of being applied. By the Indians, it is sometimes formed into boots, which are impenetrable by water, and which, when smoked, have the appearance of leather. Bottles are made of it, to the necks of which are fastened hollow reeds, through which the liquor contained in them can be squirted at pleasure. One of these, filled with water, is always presented to each of the guests at their entertainments. Flambeaux are likewise formed of this substance, which give a very brilliant light; and it is said that a torch of it, an inch and a half in diameter, and two feet long, will burn twelve hours. The inhabitants of Quito also prepare a species of cloth with the hardened juice of this tree.

CAP; the cover of the end or head of any thing. The word is very often used in the mechanical arts.

In ship-building, *cap* is a square piece of timber placed over the head or upper end of a mast, in which is a round hole to receive the top or top-gallant-masts, which are thus kept steady and firm.

Cap of a block; a semicircular projection from the sides and round the end of a block above the pins.

Cap-merchant; the purser of a ship.

To cap verses is an exercise of the memory among school-boys; the one repeating a verse, and the second proceeding where he left off, and so on with the rest.

Caps were not worn by the Romans for many ages. When either the rain or sun was troublesome, the lappet of the gown was thrown over the head; and hence all the ancient statues appear bareheaded, excepting, sometimes, a wreath or the like. The same usage prevailed among the Greeks, to whom, at least during the heroic age, caps were unknown. The sort of caps or covers of the head in use among the Romans, on divers occasions, were the *pitra*, *pileus*, *cucullus*, *galerus*, and *palliolum*, which are often confounded by ancient as well as modern writers. The general use of caps and hats is referred to the year 1449. The first seen in Europe were used at the entry of Charles VII. into Rouen. From that time, they began to take the place of *chaperons*, or hoods. When the cap was of velvet, they called it *mortier;* when of wool, simply *bonnet*. None but kings, princes, and knights were allowed to use the *mortier*. The cap was the head-dress of the clergy and graduates. Pasquin says that it was anciently a part of the hood worn by the people of the robe; the skirts whereof, being cut off, as an incumbrance, left the round cap an easy, commodious cover for the head; which cap, being afterwards assumed by the people, those of the gown changed it for a square one, first invented by a Frenchman, called Patrouillet. He adds, that the giving of the cap to the students in the university was to denote that they had acquired full liberty, and were no longer subject to the rod of their superiors, in imitation of the ancient Romans, who gave a *pileus*, or cap, to their slaves, in the ceremony of making them free: whence the proverb *vocare servos ad pileum:* hence, also, on medals, the cap is the symbol of Liberty, who is represented holding a cap in the right hand, by the point.

CAPE. Of the immense number of capes, which have received names from navigators, the limits of the present work will permit us to enumerate only a few.

Cape Ann; a cape on the coast of Massachusetts, in the township of Gloucester, forming the northern limit of Massachusetts bay; lat. 42° 35′ N.; lon. 70° 37′ W.

Cape Breton; an island of North America, belonging to Great Britain; situated in the gulf of St Lawrence; separated from Nova Scotia by the strait of Fronsac, about three miles wide. This island is about 110 miles in length, and from twenty to eighty-four in breadth, full of mountains and lakes, and intersected by a great number of creeks and bays. The soil is fertile, and abounds in timber. In the mountains are coal mines; in the valleys, excellent pasture; and the coast abounds in fish. The chief towns are Louisburg, Sydney, and Arichat. Population, 30,000. Lat. 45° 34′ to 47° 5′ N.; lon. 59° to 61° 20′ W.

Cape Cod; a noted cape and peninsula on the coast of Massachusetts, on the south side of Massachusetts bay; lat. of the cape, 42° 5′ N.; lon. 70° 14′ W. The peninsula is sixty-five miles in length, and from one to twenty in breadth, and is in the form of a man's arm, bent inward both at the elbow and the wrist. Though mostly sandy and barren, it is nevertheless populous; and the inhabitants derive their subsistence chiefly from the sea. The cape was discovered in 1602, by Bartholomew Gosnold, who gave it its name from having taken a great quantity of cod-fish near it.

Cape Fear; a dangerous cape on the coast of North Carolina, being the southern extremity of Smith's island, at the mouth of Cape Fear river; lat. 33° 32′ N.; lon. 78° 25′ W.

Cape Fear; a river of North Carolina, the largest and most important that flows wholly within that state. The north-west, or principal branch, rises in the northern part of the state, flows southerly, passing by Fayetteville, and above Wilmington. Thirty-five miles from its entrance into the ocean, it is joined by the north-eastern branch. The Cape Fear is navigable for vessels of 300 tons to Wilmington, and for steam-boats to Fayetteville.

Cape François. See *Cape Haytien.*

Cape of Good Hope; in the southern part of Africa; lon. 18° 24′ E.; lat. 33° 55′ S. Bartholomew Diaz discovered it in 1493. The tempestuous sea which beat against it prevented him from landing; he therefore called it *Cabo dos Tormentos* (see *Camoens*); but John II. changed it to *Cabo da Bona Esperanza*. It was first doubled by Vasco de Gama. The Portuguese never formed any permanent settlement here. See next article.

Cape of Good Hope; a British colony, near the southern extremity of Africa. The Dutch, who had early fixed upon this point as a watering-place for their ships, first colonized it in the middle of the seventeenth century. Reducing the Hottentots (q. v.) to slavery, or driving them beyond the mountains, they extended the Cape settlement to nearly its present limits. It was captured by the British in 1795, restored at the peace of Amiens, 1802, and again taken in 1806; since which time it has remained in their possession. The colony extends about 230 miles from north to south, and 550 from east to west; from 30° to 34° 30′ S. lat., and from 18° to 28° E. lon. The space included within these limits is about 120,000 square miles, with a population of about one to a square mile. On the west and south, it is washed by the ocean, and, on the north, it is bounded by a range of lofty mountains. The principal bays on the coast are Saldanha, Table, Plattenburg, Algoa bays. Cape Aguillas is the most southern point of the old world. In the interior, almost every variety of soil and surface is found. Several ranges of mountains, running nearly parallel to the southern coast, divide the country into successive terraces, between which lie belts of fertile land, or vast barren plains. One of these, called the *Great Karoo*, is 300 miles long and 100 broad, presenting a scene of complete desolation. In fact, according to Barrow, nearly seven-tenths of the colony are destitute of vegetation during a great part of the year. The summits of the Nieuweldt Gebirgte, the highest chain of southern Africa, are covered with perpetual snow. The Table mountain is a stupendous mass of naked rock, rising, almost perpendicularly, about 3585 feet in height. The colony is deficient in navigable rivers for vessels of any considerable burden. The principal streams are the Doorn and the Berg, flowing into the Atlantic; the Breede, Groot, and Great Fish, emptying themselves into the Indian ocean. The last, in part of its course, separates the Cape colony from Caffraria. The spring and autumn are temperate, and the most agreeable part of the year. The heat is excessive in summer, and, on account of the elevation of the surface, many parts experience the extreme of cold in winter. The soil is, of course, various, but its general character is not that of fertility. The cultivation is very imperfect, the inhabitants depending principally on pasturage. Wheat and maize thrive well; the vine flourishes luxuriantly; oranges, lemons, and figs are good, but all kinds of nuts have failed. The aloe and the myrtle grow to a

great size. Timber is scarce: the chestnut, wild almond, and plumb are indigenous. The domestic animals of civilized man have all been introduced. The sheep are of the broad-tailed kind. Lions, tigers, wolves, hyænas, buffaloes, and jackalls are numerous in the vicinity of the settlements. In the more remote parts are the elephant, the rhinoceros, the quagga, the giraffe, &c. The spring-bock is seen in herds of 10,000. Monkeys, armadillos, and other small animals are numerous. The ostrich is common. Vultures, eagles, kites, and the gigantic condor inhabit the mountains. There are also pelicans, flamingoes, parrots, and many kinds of aquatic birds. Noxious reptiles are not numerous. Fish are plentiful on the coasts. The capital is Cape Town (q. v.). Scarcely any manufactures have been introduced into the colony, and its commerce is very limited. Some British merchants have settled at Cape Town, and the trade appears to be increasing. The principal export is Cape wine. The imports are in small quantities, and consist of cloths, hardware, furniture, hats, &c. The average amount is about a million of dollars. The value of the colony to Great Britain must not, however, be estimated by its revenue. It is important, principally, as being the connecting link between that kingdom and her possessions in the East. The Dutch settlers, who live in the interior, are called *boors*, and are in a very degraded condition. Indolent and stupid, every thing about them exhibits the utmost wretchedness in the midst of plenty.—See Barrow's *Travels in Southern Africa;* Vaillant, Lichtenstein and Campbell's *Travels*, and the Rev. Mr Latrobe's *Visit to South Africa, in* 1815 *and* 1816. Beauvois, the French traveller, has also lately given interesting information on the south of Africa.

Cape Hatteras; a noted and dangerous cape on the coast of North Carolina; being the projecting point of a long reef of sand, extending from Ocracoke inlet to New inlet; lat. 35° 14′ N.; lon. 75° 30′ W.

Cape Haytien (formerly called *Cape François*, or *Le Cap*, and, during the reign of Christophe, *Cape Henry*); a town of Hayti, and the capital of the island and republic; lon. 72° 16′ W.; lat. 19° 46′ N. It is situated on the north coast; was founded in 1670; burnt in 1792, by the blacks; was the last town retained by the French in the island, but was surrendered by them to the blacks in 1803; it then became the capital of the black emperor, Henry Christophe. Before it suffered so severely by intestine convulsions, it contained a number of elegant buildings, about 900 houses of stone and brick, and a population of from 8 to 12,000; some say 20,000, 12,000 being slaves. It is situated in a very fertile tract, and has one of the most secure and convenient harbours in the island. It is built on a cape at the edge of a large plain, sixty miles long and twelve broad, between the sea and the mountains. Its situation is not fortunate, as it is screened from the land wind by the mountains, and thus left exposed to the unmitigated fervour of the sun's rays. The plain is well watered and highly cultivated. It is cut through by straight roads, forty feet broad, lined with hedges of lime and lemon trees, leading to plantations which produce as great a quantity of sugar as any spot of the same size in the world.

Cape Horn; a cape on the south coast of Terra del Fuego. It is the southern extremity of South America; lat. 55° 58′ S.; lon. 67° 21′ W. The navigation round cape Horn is very dangerous, on account of frequent tempests; yet, of late, it has been the common course of vessels, being found much preferable to the tedious passage through the straits of Magellan. The shore is inhabited by Indians, of whom little is known. The cape was discovered by Jacob le Maire, a Dutchman, in 1616. It is cold, lofty, and covered with wood.

Cape Lookout; a dangerous cape on the coast of North Carolina; lat. 34° 22′ N.; lon. 76° 37′ W.

Cape Town; capital of the cape of Good Hope; lat. 33° 6′ S. lon. 18° 23′ E.: population in 1818, 18,173; of whom 7460 were whites, 1905 free blacks, 810 apprentices, 536 Hottentots, 7462 slaves. It is agreeably situated, rather more than thirty miles from the cape of Good Hope, properly so called, at the head of Table bay, in a valley between the Table and Lion mountains. It is defended by a castle of considerable strength, and contains a court-house, a guard-house, a Calvinistic church, a Lutheran church, a theatre, and 1145 houses, many of which are fine. The tone of society is wholly commercial, the minds of all classes being bent on trade. There was not, in 1818, a public school nor a bookseller's shop in the town. The streets are broad, but ill-paved. The price of provisions is very reasonable. The town is well supplied with springs of excellent water, sufficient also for the ships which stop at the port. The harbour is tolerably secure from September to May, while the S.E. winds prevail. During the rest of the year, when the wind blows generally from the N. and N.W., ships are obliged to resort to False bay, on the opposite side of the peninsula. A missionary is supported here by the London missionary society.

Cape Verde (anciently, *Arsenarium*); on the west coast of Africa; lat. 14° 44′ N.; lon. 17° 31′ W.

Cape Verde Islands; islands of Africa, in the Atlantic; so called from cape Verde, opposite to which they are situated; 390 miles W. cape Verde, and between 15° and 18° N. lat. They belong to Portugal. As to their number, some reckon ten, others fourteen or more, by giving the name of islands to those which are only rocks. They are, in general, mountainous; the lower hills are covered with a beautiful verdure, as well as the extensive valleys between; but with little water, except what is found in ponds and wells. They are said to have been, and probably were, known to the ancients, under the name of *Gorgades*. The air is extremely hot and unwholesome. It rarely rains; and the ground is so hot that one can hardly stand in places exposed to the sun. It is dangerous to pass the night in the open air, for the great heat is often succeeded by a sudden cold, which proves mortal to such as are exposed to it. The soil is, for the most part, stony and barren; nevertheless, some parts produce rice, maize, bananas, lemons, oranges, citrons, pomegranates, figs, and melons. Grapes are gathered twice a-year. The manufacture of leather and salt forms the principal riches. Two of the islands, St Yago and St Philip, depend immediately on the king, and are the only ones fortified. The number of inhabitants is calculated at 100,000. Few whites are now seen. The governor and priests are often Negroes. The chief town is Porto Praya. In the small island of Mayo, much salt is made. Numerous vessels, principally American, visit this place for the sake of obtaining it, and bring flour to give in exchange. In 1827, the imports into the United States from these islands amounted to 77,425 dollars; the exports to them from the United States, to 104,165 dollars. The island of Fuego, one of the group, consists of one single mountain, formerly a volcano, according to lieutenant Mudge, 9,790 feet above the level of the sea.

CAPELLO, Bianca; a noble Venetian lady, whose singular adventures and final elevation have rendered her exceedingly remarkable. She was born about 1542, being the daughter of Bartolomeo Capello, a

patrician of Venice. She early fell in love with a young and handsome clerk in the banking-house of Salviati, named Buonaventuri. The consequence of the intrigue was the pregnancy of the lady, and the flight of the lovers to Florence, where they married, and Bianca lay in of a daughter. Here they lived some time in great apprehension and obscurity, until some accident or contrivance introduced Bianca to the notice of Francis, son of Cosmo, grand-duke of Tuscany. Her uncommon beauty and engaging manners made an immediate impression on a prince notorious for his attachment to the sex; and the consequence was, that she and her husband were quickly settled in a splendid palace, and the latter made chamberlain to the duke, and, to the great disgust of the Florentines, intrusted with a large share of public business. Bianca was, in the mean time, introduced at court, and became the object of great admiration; and it is asserted, that, even at that time, Francis promised to marry her, should they become released from the marriage ties by which they were each of them bound. This took place in a very few years on her part. Buonaventuri, having engaged in an intrigue with a woman of rank, was assassinated by her family; and Francis now avowedly proclaimed Bianca his mistress. As Francis, who had no issue, passionately desired even a natural child, Bianca, whose intemperate mode of living was not favourable to his wishes, carried on all the forms of pregnancy, and presented to her deluded lover a new-born male child, of poor parents, whom he joyfully received as his own, and christened Antonio. A legitimate son, produced to him soon after by his duchess, induced him to be less open in his attentions to Bianca; but the death of his wife, very soon after, opened to the latter a road to her final elevation, and she was quickly united to Francis by a private marriage. Her ambition, however, was not to be gratified without publicity; and she induced the grand-duke to send a solemn embassy to Venice, to inform the senate of his marriage, and to request them to confer on Bianca the title of *daughter of the republic*, which honour was supposed to entitle those on whom it was bestowed to a royal alliance. That government assented, and Bianca, being crowned daughter of the state, was solemnly installed grand-duchess of Tuscany in 1579. In 1582, the legitimate son of Francis expired; and, soon after, he declared Antonio his lawful son, although, it is said, Bianca had acknowledged her imposition. Ferdinand, the brother of Francis, and his lawful heir, was not blind to these proceedings, and paid the greatest attention to the subsequent reported pregnancies of the duchess, until, the state of her health setting all idea of further progeny aside, she essayed to effect a reconciliation between the brothers, and Ferdinand paid a visit to Florence. He had been there but a short time, when Francis fell ill, at his hunting village of Poggio, where his brother was a guest; and, two days after, the duchess being seized with the same symptoms, they both died, after about a week's illness, in October, 1587, Bianca being then in her 45th year. The known character of the Medici family caused this catastrophe to be attributed to poison; and a story is current, that Bianca, intending to poison Ferdinand with a prepared viand, he had the address to make the duke and duchess eat of it themselves. As there was no direct motive for the attempt at the period, and it rests only on the character of the parties, it is more reasonable to suppose that a malignant fever, at an unhealthy season, was the real cause of the sudden termination of so extraordinary a career. The hatred of the Florentines has made Bianca a monster of vice and cruelty; a thousand absurd stories were propagated of her propensity to magic, and other crimes; and, perceiving the impossibility of gaining their affections, she employed trains of spies and informers, which added still more to their animosity. The truth seems to be, that she was a woman of consummate beauty and address, with little or no principle; and such was the character of the Italian courts, at the period in which she flourished, that she had only to act in the spirit of the times, to become very nearly as vicious as the Floreutines described her.

CAPER. Capers are the unopened flower-buds of a low shrub (*capparis spinosa*), which grows from the crevices of rocks and walls, and among rubbish, in the southern parts of France, in Italy, and the Levant. The stems of the caper-bush are trailing, and two or three feet long. The leaves are alternate, or somewhat oval shape, veined, and of a bright-green colour; and the flowers are large and beautiful, with four petals, and white, with a tinge of red.—In the south of France, the caper-bush is very common. It grows wild upon the walls of Rome, Sienna, and Florence, and, when trained against a wall, flourishes even in the neighbourhood of Paris; notwithstanding which, it is almost unknown in English gardens, where it cannot be made to flower without the aid of artificial heat. It is cultivated, on a large scale, between Marseilles and Toulon, and in many parts of Italy. In the early part of the summer, it begins to flower, and the flowers continue successively to appear, until the commencement of winter. The buds are picked every morning, before the petals are expanded; and, as they are gathered, they are put into vinegar and salt. When a sufficient quantity is collected, they are distributed, according to their size, into different vessels, again put into vinegar, and then packed up for sale and exportation. This pickle is much used in sauce for boiled mutton. To persons unaccustomed to it, the taste of capers is unpleasant; but, after a little while, the palate becomes perfectly reconciled to it. The flower-buds of the marsh-marigold (*caltha palustris*) and nasturtiums are frequently pickled, and eaten as a substitute for capers. The bark of the root, cut into slices, and dried in small rolls or quills, like cinnamon, is sometimes used in medicine, in cases of obstruction of the liver.

CAPER, in shipping, is the Dutch and German name for *privateer*.

CAPERNAUM; a town in ancient Palestine, on the west side of the sea of Tiberias; lon. 35° 44′ E.; lat. 32° 45′ N. Near it were a mountain and rivulet of the same name. This place is famous, in Christian history, because Jesus used to reside here during the time of his ministry; and in its vicinity he delivered the sermon on the mount. Nothing of it now remains. As Capernaum is not mentioned in the Old Testament, it may have been built after the return from the Babylonish captivity. It stood on the coast of Galilee, on the borders of Zabulon and Nephthalim.

CAPET; the name of the French race of kings, which has given 118 sovereigns to Europe, viz. 36 kings of France, 22 kings of Portugal, 11 of Naples and Sicily, 5 of Spain, 3 of Hungary, 3 emperors of Constantinople, 3 kings of Navarre, 17 dukes of Burgundy, 12 dukes of Brittany, 2 dukes of Lorraine, and 4 dukes of Parma. The history of this royal race is, at the same time, the history of the rise and progress of the French monarchy. (See *France*.) The fate of one of the most interesting countries and n tions in Europe is connected with the name of Capet. After having been deprived of four thrones, and again restored to them, this family stands forth as the first and most ancient support of the European principle of political legitimacy, that divine right, which, in this house, commenced with treason. Its origin is remarkable. Pepin the Short, the father of Charlemagne

and mayor of the palace under the Merovingian dynasty, had displaced that royal house, and usurped the throne of the ancient kings of the Franks. After a space of 235 years, his own descendants, the Carlovingian monarchs, experienced a similar fate. Under the last Carlovingians, destitute alike of energy and wisdom, Hugh the Great, duke of France (by which was then understood the Isle of France), Orleans, and Burgundy, exercised a power as unlimited as that of the mayor of the palace under the Merovingians. On the death of Louis V., without children, in 987, his uncle Charles, duke of Lower Lorraine, laid claim to the throne, which the Franks had sworn to preserve to the family of Charlemagne. The French nobility, supported by pope John XV., proclaimed Hugh, son of Hugh the Great, duke of France and count of Paris, king, with the surname of *Capet* (*capetus*, *capito*, broad-head; or, more probably, from a sort of hat, *capatus*). The valiant Charles of Lorraine was surprised in Laon, by the treachery of a bishop, and made prisoner. He died, soon afterwards, in prison, and his son Otho, duke of Lower Lorraine, died in 1006. Both his younger brothers died childless in Germany. Thus the race of Capet was left in possession of the throne of France. According to some historians, Hugh Capet was descended from a German family. He was married to a German princess, Adelaide, daughter of King Henry I. of Germany (duke of Saxony). Hugh was crowned at Rheims, and swore to preserve to the nation, and particularly to the powerful feudal nobility and clergy, all their existing privileges. By his wise measures, he gave permanence to his dynasty, which, next to the family of Guelph, is the eldest sovereign house at present existing. (See *Bourbon.*) Hugh and the succeeding monarchs, till Louis VII., took the precaution to have their successors invested with the royal title during their own life-time. Thus Hugh had his son Robert crowned and anointed, as his colleague, as early as Jan. 1, 988. He abolished, by law, the partition of the hereditary estates among the sons of the kings, and forbade the alienation of the family domains. The daughters of the kings were endowed, from that time, with money, and the appanage which was given to the princes of the blood returned to the crown in default of male heirs. Both these principles were more fully confirmed by later laws. Thus Hugh Capet, by uniting his hereditary duchy, consisting of Paris, Isle de France, and Burgundy, unalienably with the crown, may be regarded as the founder of the French monarchy. What he had begun was completed by his successors, particularly in the times of the crusades, and by the establishment of standing armies. All the political statements illustrative of this subject are collected by the marquis de Pastoret, peer of France, in his continuation of the *Ordonnances des Rois de France de la troisième Race*, vols. xv., xvi., xvii. (Paris, 1811, 1814, 1820, fol.), with which may be compared the essay of the advocate Beugnot, which obtained the prize of the academy of inscriptions, *Essai sur les Institutions de St Louis* (Paris, 1821).

CAPI AGA; in the Turkish court, the superintendent of the eunuchs. He also announces all who desire to speak to the grand vizier, and introduces foreign ambassadors to an audience.—*Capigi* (*capidschi*) is a name applied to the guards or door-keepers of the seraglio, in number about 400. Their superintendent is called *Capigi Baschi*. They likewise convey the sultan's orders. Among their duties is that of carrying the cord to those who are to be strangled.

CAPIAS A writ or process of capias is one whereby the sheriff is ordered to arrest the body of the defendant, either before judgment, to compel him to answer to a suit; and this is called a *capias ad respondendum*; or, after the judgment, to compel him to satisfy the judgment; and this is called a *capias ad satisfaciendum*, commonly abbreviated *ca. sa.* In case of injuries without force, the civil law, and, originally, the common law, did not authorize the arrest of the defendant before judgment, that is, the arrest *to answer*; and, upon feudal principles, says Sir William Blackstone, 3 Com. 281, "the person of a feudatory was not liable to be attached for injuries merely civil, lest, thereby, the lord should be deprived of his services." The first writ of *capias ad respondendum* was given by act of parliament in 1267, 52 Henry III., c. 23, sec. 1, which provided, that, "if bailiffs, which ought to make account to their lords, do withdraw themselves, and have no lands nor tenements whereby they may be distrained, they shall be attached by their bodies, so that the sheriff shall cause them to come to make their account." This act applied to a particular description of receivers, and supposes them not only to be debtors, but also to have in their own hands the evidence of the amount of the debt, the production of which was one object of the process. The statute of 13 Edward I., c. 11, passed in 1285, eighteen years after the former, extends this process to "all manner of receivers bound to yield account," and provides "if they be found in arrearages upon this account, their bodies shall be arrested, and, by the testimony of the auditors, shall be sent into the next gaol, and be imprisoned in irons under safe custody, and remain in prison at their own cost, until they have satisfied their master [the creditor] fully of their arrearages." This statute seems to suppose the proof and establishment of the debt before the arrest, and, so far, seems to have the character of a *ca. sa.*; but it is considered a *capias ad respondendum* by Sir William Blackstone; so in Jacob's Law Dictionary, and, indeed, generally. And it appears that the practice of arresting on mesne process, that is, before judgment, *to answer*, in civil suits, grew out of these statutes; for the subsequent statutes of 25 Edward III., c. 17 (A.D. 1350), providing that "such process shall be made in writ of debt, detinue of chattels, and taking of beasts, by writ of capias, as is used in writ of account;" and of 21 Henry VII., c. 9 (A.D. 1503), providing that "like process shall be hereafter, in actions upon the case, as in action of trespass or debt;" evidently have reference to an arrest *to answer*. A writ upon which a suit is commenced is either a capias, distress, or summons; either the person of the defendant is seized, and (unless he is bailed) imprisoned until the trial, or his goods or lands are seized as a guarantee of his appearance to answer; and more often, in modern times, to obtain a lien to secure satisfaction of the judgment; or he is only summoned, that is, merely has notice that a suit has been commenced before such a court, by such a plaintiff, and is to be heard at such a time. This last is uniformly the process adopted in claims of land. But by the statute of 5 Geo. II., c. 27, since made perpetual by another statute, it is provided, that, "in all cases where the cause of action shall not amount to ten pounds, the plaintiff shall not arrest the body of the defendant;" and "in all cases where the cause of action shall amount to ten pounds, an affidavit shall be made and filed of such cause of action, and the sum specified in such affidavit shall be endorsed on the writ, for which sum the sheriff shall take bail, and no more."

CAPIGI. See *Capi Aga.*

CAPILLARY TUBES, in physics; little pipes, the canals of which are extremely narrow, their diameter being only a half, third, or fourth, &c., of a line. If one end of a tube of this sort, open at both

ends, be immersed in a fluid which adheres to glass, as water, the liquor within the tube will rise to a sensible height above the surface of that without. This phenomenon is explained by the attraction which exists between the glass and the fluid. Such liquids as do not adhere to glass (e. g., quicksilver) do not rise in the tube: on the contrary, they stand lower within than without it. The mutual action of the elementary particles of matter, of which capillarity is a noted instance, gives rise to phenomena as interesting, and, in certain cases, as susceptible of being attached to theory, by rigorous mathematical reasoning, as the phenomena of universal gravitation. The ascent of liquids in capillary tubes engaged much of the attention of experimental philosophers about the beginning of the last century. Hauksbee found that the ascent of the liquid does not depend in any way on the thickness of the tube, and that when two plates, forming any small angle with each other, are plunged vertically into a fluid, the fluid which rises between them takes the form of an equilateral hyperbola; from which it followed, that, in tubes of the same matter, the ascent of the liquid follows the inverse ratio of their interior diameters. In order to explain these facts, all succeeding philosophers seem to have agreed in assuming the existence of a cohesive force among the particles of the liquid, and an adhesive force between the particles of the liquid and those of the tube. But these attractive forces can only be defined by their relative intensities at an equal distance, and the law according to which they diminish as the distance is increased. Now, there are no data from which either their relative intensities or the law of their variation can be determined: we are, therefore, reduced to choose among a number of hypothetical laws, all equally possible; and the explanation, of course, depends on the particular hypothesis we adopt; hence the theories of Clairaut, Young, Laplace, and Poisson.

Clairaut was the first who attempted to reduce the phenomena of capillarity to the laws of the equilibrium of fluids, and exactly analyzed all the forces that concur to elevate the liquid in a glass tube. He showed that the portion of the liquid which is elevated in the tube above the exterior level, is kept in equilibrium by the action of two forces, one of which is due to the attraction of the meniscus terminating the column, and the other to the direct attraction of the tube on the molecules of the liquid. Clairaut, however, regarded this last force as the principal one, and even supposed the attraction of the tube to extend as far as its axis; but this supposition is contrary to the nature of molecular forces, which extend only to insensible distances. The action of the tube has, in fact, no influence on the elevation or depression of the contained liquid, excepting in so far as it determines the angle under which the upper surface of the fluid intersects the sides of the tube. Neglecting, therefore, this force as insensible, there remains only the action of the meniscus to support the weight of the elevated column. But though Clairaut made an erroneous supposition respecting the nature of molecular action, and failed in the attempt to demonstrate from theory, that the ascent of the liquid is inversely proportional to the diameter of the tube, he showed that a number of hypotheses, regarding the law of attraction, may be laid down, from any one of which that law of ascent may be deduced; and he demonstrated a very remarkable result, namely, that if the attraction of the matter of the tube on the fluid differs only by its intensity, or co-efficient, from the attraction of the fluid on itself, the fluid will rise above the surrounding level when the first of these intensities exceeds half the second.

Young referred the phenomena of cohesion to the joint operation of attractive and repulsive forces which, in the interior of fluids, exactly balance each other, and assumed the repulsive force to increase in a higher ratio than the attractive, when the mutual distances of the molecules are diminished. From these considerations he was led to discover a very important fact in the theory of capillary action, namely, the invariability of the angle which the surface of the fluid makes with the sides of the tube.

Laplace published his theory of capillary attraction in 1806 and 1807, in two Supplements to the *Mécanique Céleste*. Assuming the force of molecular action to extend only to imperceptible distances, he demonstrated that the form of the surface of the liquid is a principal cause of the capillary phenomena and not a secondary effect, and determined the part of the phenomena which is due to the cohesive attraction of the molecules of the fluid to each other, as well as that which results from their adhesion to the molecules of the tube. The separate consideration of the cohesive and adhesive forces leads to two equations, which comprehend the whole theory of capillarity—a general equation, common to all those points of the capillary surface of which the distance from the sides of the tube is greater than the radius of the sphere of molecular action; and a particular equation belonging to those points which are situated only at insensible distances from the surface of the tube, or are within the sphere of its action. This last equation will obviously express the angle which the surface of the meniscus makes with the sides of the tube; an angle which, as it depends only on the nature of the tube and that of the liquid, is constant, and given in every case, the liquid and tube being supposed homogeneous. Laplace further supposes, in the case of elevation, that an infinitely thin film of the liquid first attaches itself to the sides of the tube, and thus forms an interior tube, which acts by its attraction alone to raise the column, and maintain it at a determinate height. The height of the column, consequently, depends on the cohesion and density of the liquid. Poisson has reinvestigated the whole theory of capillary attraction. Taking the most general case of the problem, he considers not merely the surface of a single liquid, but the surface formed by the contact of two liquids of different specific gravities, placed, the one above the other, in the same tube, and deduces the two equations which determine the form of the separating surface, and the angle under which it intersects the sides of the tube. These equations are, in form, the same as those of Laplace; but the definite integrals, which express the two constant quantities they include, are very different; and their numerical values would be so likewise, if these, instead of being determined experimentally, could be calculated *a priori* from the analytical expressions. This, however, cannot be done without a knowledge of the law according to which the molecules of the liquid attract each other, as well as of that which regulates the action of the tube on the liquid. In applying his general solution to the explanation of the principal phenomena of capillarity, he has taken occasion to correct some inaccuracies of Laplace. The demonstration which Laplace had given of the invariability of the angle which the surface of the liquid makes with the sides of the tube was not altogether satisfactory; and he had even supposed that it changes its value when the liquid reaches the summit of the tube.

Poisson has demonstrated that the invariability of this angle will always be preserved, unless the curvature of the interior of the tube is infinitely great; or, in other words, unless its radius is infinitely small, and of the same order of magnitude as the radius of the sphere of molecular action. Hence the angle

cannot vary when the liquid reaches the summit of the tube; for, however small the radius of the tube may be, it is always incomparably greater than the radius of the sphere of molecular action. The great importance of the theory of molecular action, in physical science, is becoming daily more apparent; and it must soon form the principal basis of rational mechanics, which has too long continued an abstract science, founded, not on a real, but an imaginary state of bodies. The gradual progress of discovery renders it more and more probable, that there are only two laws according to which all the forces of nature decrease, the first being proportional to the inverse square of the distance, and the second to a function of the distance of which we know nothing, except that it vanishes altogether when the distance has a sensible magnitude. The gravitation of the great bodies of the universe, the electric and magnetic forces, whether attractive or repulsive, are instances of the former; while the vibrations of elastic bodies, the communication of motion, whether by shock or by pressure, as well as capillary attraction, the refraction of light, and chemical actions, depend on the latter, which is the law of the molecular forces. Now, it is from this last class of forces that the laws of equilibrium and motion ought to be deduced, and not from hypotheses entirely gratuitous respecting the absolute hardness, rigidity, and incompressibility of bodies—qualities which have no existence in nature. The only obstacle to the attainment of this desirable result seems to be the difficulties of the calculus. It is, indeed, impossible to deduce the laws of motion from the action of molecular forces in any other manner than by the application of a very refined and difficult analysis; yet the subject presents some facilities, and there are considerations which go far to obviate the mathematical difficulties. For example, in deducing the equations of equilibrium of solid and liquid bodies, it is not necessary to compute the total force acting on an isolated molecule. These equations depend on the resultant of actions which take place between two portions of the same body, of insensible magnitude, but comprising each an extremely great number of molecules. The resultant of the aggregate forces of the different molecules comprehended within the sphere of action of an individual molecule, is therefore, a determinate function of their mean distance, and independent of any irregularity in their distribution. The same resultant is also independent of the magnitude of the radius of the sphere of action, which cannot be determined in any precise manner, and with respect to which we only know that it is insensible. It is on these hypotheses that the computation of molecular forces is essentially founded.—See Foreign Quarterly Review, vol. ix., and Poisson's *Nouvelle Théorie de l'Action Capillaire* (Paris, 1831).

CAPILLARY VESSELS; the minute vessels in which the arteries terminate, and from which, in a way not well understood, the veins commence. The distinction between the arteries and veins is, therefore, lost in these vessels. The support of the solid, and the formation of the fluid, parts of the system take place especially in these vessels.

CAPITAL, in political economy, is the stock of valuable exchangeable commodities possessed by individuals or a community. This is the usual and more limited meaning of the term; for, in comparing the capital of one individual with that of another, we have in mind the amount of money for which the stock of each can be exchanged. The market value is in view. In estimating the capital of any individual, we necessarily take into consideration the debts due to and from him; and many men of large capital are only possessed of claims upon others; their whole stock is in the hands of others at interest; and they have only promises for a certain amount of money, and actually possess neither lands nor goods to any considerable value; while others possess large quantities of both, and yet have little or no capital, since they owe, in money, the value of the greater part or the whole of their possessions. Now it is plain that no individual can undertake production, to any large extent, without an extensive stock. He must have land to cultivate, or materials to work up, and implements to work with. Even a savage must have a capital, such as his hut, clothes, cooking utensils, food enough to support him until he can obtain a new supply, and implements, such as a hatchet, gun, canoe, fishing gear, to procure this supply. The first effort of industry is to supply the implements, apparatus, and machinery for his own employment; and as society and the arts advance, and the operations of industry are extended, the implements, apparatus, machinery, and materials, requisite in conducting the processes of production, must be proportionally accumulated; and these will constitute a part of the capital of a community, and also of an individual, which is essential to success in productive processes. And these can be commanded by any one in proportion to the extent of his individual capital; or, if he have credit, then his resources for production will depend upon the capital of others—in other words, that of the community to which he belongs.

In considering the aggregate capital of a community, we may put out of the question all the debts due from any of the members to others; for, whether these be great or small,—and they will vary according as the practice of giving credit is more or less in use,—still the capital of the community will consist in its lands, buildings, ships, machinery, materials on hand, implements; in short, in all those things which bear a value in the market. Provided the community owes no debts abroad, these will constitute its aggregate capital; and, if its members are indebted abroad, we find its actual net capital, as in the case of an individual, by deducting the amount of its debts from the value of its possessions, without regarding the debts due from some of its members to others.

In comparing the capital or wealth of two communities, we may be led into an error by comparing the value of their possessions in gold and silver, since the value of these metals is well known to differ in different countries, by whatever standard the comparison be made. If, for instance, we compare the value of the metals in reference to the wages of a common day-labourer, we find he has two or three pence a-day in Egypt, and twenty or forty pence in Britain. We shall find the same diversity in other things. If we take a horse, of the same beauty and serviceable qualities, for an example, we shall find his price, in money, to be twice as great in one place as in another. In order, therefore, to make such a comparison through the medium of the metals, or by adopting them as a common measure, we should, in the first place, correct the measure itself, and ascertain whether an ounce of gold, in one of the places between which the comparison is to be made, is worth a half of an ounce or an ounce and a half in the other; and the way of correcting the standard would be, to take equal quantities of a great number of articles of the same quality, in the two places, or equivalent quantities of equivalent articles, as nearly as their equivalence can be ascertained, and compare their money prices in the two places. But this correction of the common measure is not very easily made. The means of comparing the value of money at successive periods, in the same community, are very defective; and the only attempt at any scale of value, of this description, known to the writer of this article, is

that of Mr Evelyn, published in the Transactions of the Royal Society of London for 1798, and corrected, since, by Mr Colquhoun. But suppose the comparative value of money, in two states or kingdoms, to be ascertained, and then a valuation of all the property in each, of every description, to be made, the capital of each and the comparative capital of the two are thus ascertained. But this comparison would not show the comparative resources of the two, either for war or for production. This will appear from the obvious fact, that a river like the Hudson is a greater facility to transportation than the Languedoc canal; yet, in making a return of the property, or the estimation of the capital of France, the Languedoc canal would be a great item, whereas the Hudson river, though of equal or greater utility, would not appear as constituting a part of the capital of New York. The inhabitants are the great agents of production in every country; and, though their productive efficiency will be influenced, very essentially, by the amount of capital, fertility of the soil, quality of its products, facilities of transportation, and arrangements of industry, still the character, habits, and skill of the agents themselves are the most important circumstances in estimating the productive resources of a community. Industry and skill will rapidly create capital. Mr Phillips, in his Manual of Political Economy, estimates that the whole value of the capital of a country is consumed and reproduced every three or four years. But the training of a population, and forming its character and habits, is a work of many years. The most important ingredient in the national resources is, therefore, not only no part of its capital, but is a thing of very slow growth, and results from the combined and long-continued influence of a thousand causes, moral, physical, and political, too complicated to be disentangled, and so blended that the action of each cannot be distinctly traced. Economists have confined their views of production too much to considerations of capital, and neglected, or, at least, not given sufficient weight to, the other economical capacities and resources.

Capital is distinguished into *floating*, or *moveable*, and *fixed*; the former consisting of things that may be moved, and are susceptible of manual delivery; the latter, of those confined to one place, as a house or piece of land. We use the terms in a different sense when applied to any particular establishment, by the floating capital of which is meant that which remains after payment is made for all their apparatus and the implements of their business, and which is usually invested in the materials to be manufactured or transported, or to pass through the process, whatever it is, which constitutes the business conducted. Thus one carrying on a flouring-mill wants a floating or disposable capital, over and above the cost of his works, to be invested in wheat to be floured, and flour not yet disposed of. This instance illustrates what is meant by the floating or disposable capital of a whole community being that movable, exchangeable stock of things on hand, over and above the fixtures and apparatus of production, including lands, buildings, ships, working animals, all the implements of the arts, with necessary food, clothing, and a stock of seed sufficient for the time requisite for reproduction. What remains over these is the disposable capital, and, in a flourishing community, the disposable floating capital is constantly invested in new fixed capital, implements and apparatus of production. A declining community, on the contrary, consumes a part of its implements and apparatus of industry; or, what is, in effect, the same thing, it does not repair and replace the damage of use and decay. The idea is held out in many economical treatises, that a community cannot have a surplus capital; that is, it cannot have more capital than it can make use of in its consumption and reproduction. As no grounds whatever are given for this doctrine, it seems to be hardly entitled to a consideration; for the position is certainly, at the first view, very improbable, since we know very well that men may accumulate; and why they may not, in any possible case, accumulate a surplus, does not appear by any plausible reason; and whether such surplus accumulation may be useful or not, will depend entirely upon the kind of articles of which such accumulation consists. If it consist in articles the value of which depends on the prices in foreign markets, the excess may be of no value at all; for it may so depress the foreign prices as to countervail all the indirect advantage arising from the cheaper supply, for a time, of the domestic demand.

Fictitious capital generally means nothing more nor less than excessive credits, which throw the management and disposition of a great deal of property into the hands of persons who are not able to answer for the risks of loss from its bad management, or other causes. A whole community, in the aggregate, can have fictitious capital only in case of its members having an excessive credit in a foreign country. But the members may, among themselves, have a fictitious capital, by too great facility of credits in their dealings with each other, and the fiction, in this case, is in their false promises of payment.

CAPITAL, in geography; a city in which reside the highest authorities of a district, province, country, &c. Capitals, in the modern meaning of the word, can hardly be said to have existed in ancient times; at least, they were then only the seat of the sovereign, but not the centre of all the national activity, Rome only, perhaps, excepted; but this city was, for a very long time, the state itself, and, at a later period, the tyrant of the whole empire, rather than the head of a well-organized body. In Asia there existed, indeed, in ancient times, capitals of very large empires; but they are not to be compared to the capitals of large modern empires, since the channels of communication and intercourse had not then reached that degree of perfection which enables them, in our days, to bring into close connexion all parts of a country. Each province was, therefore, left much more to itself. It would be difficult to determine whether the good or evil consequences of large capitals, in modern times, are greater, and such an examination would far exceed our limits; otherwise, it would be very easy to point out, in every department of civilization, in science, social intercourse, politics, arts, &c., both salutary and pernicious effects, resulting from the influence of capitals. It seems to us a matter of little doubt that it must be regarded as disadvantageous to any country, if the capital ceases to be the concentration of the skill, genius, and strength of a nation, for the benefit of the whole, and by a disproportionate superiority destroys the importance of the rest of the country, as we find to be the case with Paris, which, as has been often observed, contains France. In Germany, the state of things is quite the reverse. There is no city which may boast of being the point of national concentration. The consequences have been very advantageous to science, and somewhat disadvantageous to literature. In politics, this want of a central point has had melancholy consequences for Germany. London never exercised that degree of influence over England which Paris has over France; one reason of which may be, that the two most extensive institutions for the diffusion of knowledge are not seated in the metropolis. The system of concentration has, there is little doubt, been carried to an extreme in Europe; the best of every

thing having been collected in the capitals, and the provinces having been almost stripped of pictures, libraries, &c. In many countries, this fault is acknowledged, and a return to a more equitable system is perceptible. The great increase of wealth and consequence, which the capitals of large empires in Europe have acquired in modern times, by the introduction of the bureau system (q. v.), which has brought together, in one place, the different departments of administration, has had much influence on military operations, having made the capture of the capital now far more important than formerly.—In the United States, the word *capital* is not used officially, but, instead of it, the phrase *seat of government*, which is, in most cases, not the largest place of the state. It is not here the place to discuss, whether it would be more beneficial to the whole country if the seat of the general government were in one of the largest cities of the United States. As it is now, to use the words of a traveller, "Washington must by no means be considered as the capital of the nation, but only as the capital of governmental business. It is a camp of business."

CAPITAL, in architecture. See *Architecture.*

CAPITAL OFFENCE. See *Crime.*

CAPITAL PUNISHMENT. The questions most commonly discussed by philosophers and jurists under this head are, 1. as to the right of governments to inflict the punishment of death; 2. as to the expediency of such punishment; 3. as to the crimes to which, if any, it may be most properly confined and limited; 4. as to the manner in which it should be inflicted. A few words will be said on each of these points.

1. As to the *right* of inflicting the punishment of death. This has been doubted by some distinguished persons; and the doubt is often the accompaniment of a highly cultivated mind, inclined to the indulgence of a romantic sensibility, and believing in human perfectibility. The right of society to punish offences against its safety and good order will scarcely be doubted by any considerate person. In a state of nature, individuals have a right to guard themselves from injury, and to repel all aggressions by a force or precaution adequate to the object. This results from the right of self-preservation. If a person attempts to take away my life, I have, doubtless, a right to protect myself against the attempt by all reasonable means. If I cannot secure myself but by taking the life of the assailant, I have a right to take it. It would otherwise follow, that I must submit to a wrong, and lose my life, rather than preserve it by the means adequate to maintain it. It cannot, then, be denied that, in a state of nature, men may repel force by force, and may even justly take away life, if necessary to preserve their own. When men enter society, the right to protect themselves from injury and to redress wrongs is transferred, generally, from the individuals to the community. We say that it is generally so, because it must be obvious that, in many cases, the natural right of self-defence must remain. If a robber attacks one on the highway, or attempts to murder him, it is clear that he has a right to repel the assault, and to take the life of the assailant, if necessary for his safety; since society, in such a case, could not afford him any adequate and prompt redress. The necessity of instant relief, and of instant application of force, justifies the act, and is recognized in all civilized communities. When the right of society is once admitted to punish for offences, it seems difficult to assign any limits to the exercise of that right, short of what the exigencies of society require. If a state have a right to protect itself and its citizens in the enjoyment of its privileges and its peace, it must have a right to apply means adequate to this object. The object of human punishments is, or may be threefold; first, to reform the offender; secondly, to deter others from offending: and, lastly, to secure the safety of the community, by depriving the offender of the power of doing mischief. The first consideration rarely enters into human legislation, because of the inadequacy of our means to produce great moral results by the infliction of punishment. The two latter considerations enter largely into the theory and practice of legislation. Who is to be the judge, in such cases, what is the adequate punishment for any offence? Certainly, punishments ought not to be inflicted, which are utterly disproportionate to the offence, and beyond the exigencies of society. No government has a right to punish cruelly and wantonly, and from mere revenge; but, still the discretion must be vested somewhere, to say what shall be the degree of punishment to be assigned to a particular offence. That discretion must be, from its nature, justly a part of the legislative power, and to be exercised according to the actual state of society. It may, nay, it must be differently exercised in different ages, and in different countries; for the same punishment which, in one age or country, may be sufficient to suppress an offence, or render it comparatively harmless, may, in another age or country, wholly fail of the effect. If mild punishments fail of effect, more severe must be resorted to, if the offence be of a nature which affects society in its vital principles, or safety, or interests. The very frequency of a crime must often furnish a very strong ground for severe punishment, not only as it furnishes proof that the present punishment is insufficient to deter men from committing it, but from the increased necessity of protecting society against dangerous crimes. But it is often said, that life is the gift of God, and therefore it cannot justly be taken away, either by the party himself, or another. If he cannot take it away, he cannot confer that power on others. But the fallacy of this argument is obvious. Life is no more the gift of God than other personal endowments or rights. A man has, by the gift of God, a right to personal liberty and locomotion, as well as to life; to eat and drink and breathe at large, as well as to exist; yet no one doubts that, by way of punishment, he may be confined in a solitary cell; that he may be perpetually imprisoned or deprived of free air, or compelled to live on bread and water. In short, no one doubts that he may be restrained in the exercise of any privileges or natural rights short of taking his life. Yet the reasoning, if worth any thing, extends to all these cases in an equal degree. If, by his crimes, a man may justly forfeit his personal rights, why not his life? But we have seen that it is not true, even in a state of nature, that a man's life may not be taken away by another, if the necessity of the case requires it. Why, then, may not society do the same, if its own safety requires it? Is the safety of one person more important than the safety of the whole community? Then, again, as to a man's inability to confer on others a right which he does not himself possess. Suppose it is so; the consequence which is deduced from this does not, in fact, arise. Blackstone, indeed, in his Commentaries (4 *Comment.* 8), seems to deduce the right of society to punish capital offences, in certain cases (that is, in cases of *mala prohibita*, and not *mala in se*), from the consent of the offenders. The marquis Beccaria, on the other hand, denies that any such consent can confer the right, and therefore objects to its existence. But the notion of consent is, in nearly all cases, a mere theory, having no foundation in fact. If a foreigner comes into a country, and commits a crime at his first entrance, it is a very forced construction to say that he consents to be bound by its laws. If a pirate commits piracy, it is almost absurd to say

that he consents to the right of all nations to punish him for it. The true and rational ground on which the right rests, is not the consent of the offender, but the right of every society to protect its own peace, and interests, and property, and institutions, and the utter want of any right, in other persons, to disturb, or destroy, or subtract them. The right flows, not from consent, but from the legitimate institution of society. If men have a right to form a society for mutual benefit and security, they have a right to punish other persons who would overthrow it. There are many cases where a state authorizes life to be taken away, the lawfulness of which is not doubted. No reasonable man doubts the right of a nation, in a just war, especially of self-defence, to repel force by force, and to take away the lives of its enemies. And this right is not confined to repelling present force, but it extends to precautionary measures, which are necessary for the ultimate safety of the nation. In such a war, a nation may justly insist upon the sacrifice of the lives of its own citizens, however innocent, for the purpose of insuring its own safety. Accordingly, we find that all nations enroll militia and employ troops for war, and require them to hazard their lives for the preservation of the state. In these cases, life is freely sacrificed by the nation; and the laws enacted for such purposes are deemed just exercises of power. If so, why may not life be taken away by way of punishment, if the safety of society requires it? If a nation may authorize, in war, the destruction of thousands, why may it not authorize the destruction of a single life, if self-preservation require it? The mistake, however, is in supposing that life cannot be taken away without the consent of the party. If the foregoing reasoning be correct, such consent is neither supposed nor necessary. In truth, the supposition of an original compact between all the persons who are subject to the regulations of a society, by their own free consent, as the necessary and proper basis on which all the rights of such society depend, is, at best, a gratuitous supposition; and it sometimes leads to very incorrect results. It may be added, that the Scriptures most clearly recognize and justify the infliction of capital punishments in certain cases.

2. As to the *expediency* of capital punishment. This opens a wide field for discussion. Some able men, who do not doubt the right, do still deny the expediency of inflicting it. It may be admitted, that a wise legislature ought to be slow in affixing such a punishment to any but very enormous and dangerous crimes. The frequency of a crime is not, of itself, a sufficient reason for resorting to such a punishment. It should be a crime of great atrocity and danger to society, and which cannot otherwise be effectually guarded against. In affixing punishments to any offence, we should consider what are the objects and ends of punishment. It is clear that capital punishment can have no effect to reform the offender himself. It may have, and ordinarily does have, the effect to deter others from committing a like offence; but, still, human experience shows that even this punishment, when inflicted for small offences, which are easily perpetrated, and to which there is great temptation, does not always operate as an effectual terror. Men sometimes are hardened by the frequent spectacles of capital punishments, and grow indifferent to them. Familiarity deprives them of their horror. The bloodiest codes are not those which have most effectually suppressed offences. Besides, public opinion has great weight in producing the acquittal or condemnation of offenders. If a punishment be grossly disproportionate to the offence, if it shock human feelings, there arises, insensibly, a sympathy for the victim, and a desire to screen him from punishment; so that, as far as certainty of punishment operates to deter from crimes, the object of the legislature is often thus defeated. It may be added, that a reasonable doubt may fairly be entertained, whether any society can lawfully exercise the power of punishing, beyond what the just exigencies of that society require. On the other hand, a total abolition of capital punishments would, in some cases at least, expose society to the chances of deep and vital injuries. A man who has committed murder deliberately, has proved himself unfit for society, and regardless of all the duties which belong to it. In his case, the *lex talionis* can hardly be deemed unjust. The safety of society is most effectually guarded by cutting him off from the power of doing further mischief. If his life be not taken away, the only other means left are, confinement for life, or transportation and exile for life. Neither of these is a perfect security against the commission of other crimes, and may not always be within the power of a nation without great inconvenience and great expense to itself. It is true that the latter punishments leave open the chance of reform to the offender, which is, indeed, but too often a mere delusion; but, on the other hand, they greatly diminish the influence of another salutary principle, the deterring of others from committing like crimes. It seems to us, therefore, that it is difficult to maintain the proposition that capital punishments are, at all times and under all considerations, inexpedient. It may rather be affirmed that, in some cases, they are absolutely indispensable to the safety and good order of society. We should incline to say that, as a general rule, every nation, in its legislation on this subject, must be governed very much by the manners, customs, habits of thinking, and state of opinion, among the people upon whom it is to operate. In a rude and barbarous state of society, summary and almost vindictive punishments seem more necessary than in a highly polished and civilized state of society.

3. As to the *crimes* to which capital punishments may most properly be limited. From what has been already said, this must depend upon the particular circumstances of every age and nation; and much must be left to the exercise of a sound discretion on the part of the legislature. As a general rule, humanity forbids such punishments to be applied to any but crimes of very great enormity, and danger to individuals or the state. If any crimes can be effectually suppressed by moderate means, these ought, certainly, to be first resorted to. The experience, however, of most nations, if we may judge from the nature and extent of their criminal legislation, seems to disprove the opinion so often indulged by philanthropists, that moderate punishments are sufficient to suppress crimes, and that capital punishments are rarely necessary. The codes of most civilized nations abound with capital punishments. That of Great Britain, a nation in which the public legislation has a deep infusion of popular opinion, is thought to be uncommonly sanguinary. Blackstone, in his Commentaries (vol. iv. 18), admits that, in his time, not less than *one hundred and sixty crimes* were, by the English law, punishable with death. In the code of the United States of America, only *nine* crimes are so punishable, viz., treason, murder, arson, rape, robbery of the mail, fraudulent casting away ships, rescue of criminals capitally convicted during execution, and piracy, one species of which is the African slave-trade. In the codes of the several states of the Union, still fewer crimes are generally punishable with death. It remains yet to be proved, whether the general mildness of the American penal code affords any greater security against crimes than exists in other nations. Hitherto, the temptations to commit them have been less

there, than in other countries less abundantly and cheaply supplied with the necessaries of life. Beccaria, with his characteristic humanity and sagacity, has strongly urged that the certainty of punishment is more important to deter from crimes than the severity of it. At present, there is great danger that the pardoning power, in our free forms of government, will, in a great measure, overthrow this salutary principle. Its exercise, therefore, ought to be watched with the greatest jealousy and care, lest the abuse of it should lead to the introduction either of absolute impunity for offences, or of more extensive capital punishments. It will probably be found, from the experience of most nations, that capital punishment ought not wholly to be dispensed with. On the other hand, it may be safely affirmed, that there is no positive necessity to apply it to a very large number of crimes. Treason, murder, arson, piracy, highway robbery, burglary, rape, and some other offences of great enormity, and of a kindred character, are not uncommonly punished in this manner; but beyond these, it is extremely questionable whether there is any necessity or expediency of applying so great a severity. Still, however, as has been already intimated, much must depend upon the opinion and character of the age, and the prevailing habits of the people, and upon the sound exercise of legislative discretion. What may be deemed uselessly severe in one age or country, may be positively required by the circumstances of another age or country.

4. As to the *manner* of inflicting the punishment of death. This has been different in different countries, and in different stages of civilization in the same countries. Barbarous nations are generally inclined to severe and vindictive punishments; and, where they punish with death, to aggravate it by prolonging the sufferings of the victim with ingenious devices in cruelty. And even in civilized countries, in cases of a political nature, or of very great atrocity, the punishment has been sometimes inflicted with many horrible accompaniments. Tearing the criminal to pieces, piercing his breast with a pointed pole, pinching to death with red-hot pincers, starving him to death, breaking his limbs upon the wheel, pressing him to death in a slow and lingering manner, burning him at the stake, crucifixion, sawing him to pieces, quartering him alive, exposing him to be torn to pieces by wild beasts, and other savage punishments, have been sometimes resorted to for the purposes of vengeance, or public example, or public terror. Compared with these, the infliction of death by drowning, by strangling, by poisoning, by bleeding, by beheading, by shooting, by hanging, is a moderate punishment. In modern times, the public opinion is strongly disposed to discountenance the punishment of death by any but simple means; and the infliction of torture is almost universally reprobated. Even in governments where it is still countenanced by the laws, it is rarely resorted to; and the sentence is remitted, by the policy of the prince, beyond the simple infliction of death. In Prussia, where atrocious criminals are required, by the penal code, to be broken upon the wheel, the king always issues an order to the executioner to strangle the criminal (which is done by a small cord not easily seen) before his limbs are broken. So, in the same country, where larceny, attended with destruction of life, is punished by burning alive, the fagots are so arranged as to form a kind of cell, in which the criminal is suffocated by the fumes of sulphur, or other means, before the flame can reach him. In England, in high treason, the criminal is sentenced to be drawn to the gallows, to be hanged by the neck, and cut down alive, to have his entrails taken out and burned while he is yet alive, to have his head cut off, and his body divided into four parts, and these to be at the king's disposal. But, generally, all the punishment is remitted by the crown, except the hanging and beheading; and when it is not, by connivance of the officers, the criminal is drawn on a hurdle to the place of execution, and is not disembowelled until actually dead. In other cases, the punishment is now simply by hanging, or, in the military and naval service, by shooting. In France, formerly, the punishment of death was often inflicted by breaking the criminal on the wheel. (Damiens was torn to pieces by horses, after he had been tormented with red-hot pincers, and had suffered other horrid tortures.) The usual punishment now is beheading by the guillotine. In cases of parricide, the criminal is conducted, barefooted, and covered with a black veil, to the place of execution, where his right hand is cut off just before he is beheaded. In Austria, the general mode of punishment is by hanging. In Prussia, hanging is rarely inflicted; but the usual punishment is beheading with a heavy axe, the criminal's head being first tied to a block. In other German states, the uncertain mode of execution by the sword still exists. Sand was executed in this manner. It should be remarked, however, that, in Germany, hanging has always been deemed the most infamous sort of punishment; and the sentence has often been commuted for beheading by the sword, as a milder mode of punishment. In the United States of America, hanging is the universal mode of capital punishment; and, indeed, the constitution of the United States contains a provision, declaring that "cruel and unusual punishments shall not be inflicted." In China, murderers are cut to pieces; robbers, not. In Russia, the punishment of death has been frequently inflicted by the knout. In Turkey, strangling, and sewing the criminal up in a bag, and throwing him into the sea, are common modes of punishment. In the Roman code, many severe and cruel punishments were prescribed. During the favoured times of the republic, many of these were abolished or mitigated. But again, under the emperors, they were revived with full severity. In the ancient Grecian states, the modes of punishment were also severe, and often cruel. But the most general mode of punishment, in ordinary cases, seems, both in Greece and Rome, to have been by hanging. Whether the ancient Greek mode of capital punishment, by taking poison at such hour as the condemned party should choose, has ever been adopted in any modern nation, we are unable to say. As far as we have been able to learn, it is not in use among any Christian people; and the idea of suicide connected with it would probably prevent any such nation from adopting it.

Whether executions ought to be in public or in private, has been a question much discussed, and upon which a great diversity of opinion exists among intelligent statesmen. On the one hand, it is said that public spectacles of this sort have a tendency to brutalize and harden the people, or to make them indifferent to the punishment; and the courage and firmness with which the criminal often meets death, have a tendency to awaken feelings of sympathy, and even of admiration, and to take away much of the horror of the offence, as well as of the punishment. On the other hand, it is said that the great influence of punishment, in deterring others from the like offence, cannot be obtained in any other way. It is the only means to bring home to the mass of the people a salutary dread and warning; and it is a public admonition of the certainty of punishment following upon crimes. It is also added, that all punishments

ought to be subjected to the public scrutiny, so that it may be known that all the law requires, and no more, has been done. If punishments were inflicted in private, it could never be known whether they were justly and properly inflicted upon the persons condemned; or whether, indeed, innocent persons might not become the victims.

In England, the court before which the trial is had declares the sentence, and directs the execution of it; and its warrant is a sufficient authority to the proper officer to execute it. In the courts of the United States, there is a like authority; but in the laws of many of the states, there is a provision that the execution shall not take place except by a warrant from the governor, or other executive authority. In cases of murder and other atrocious crimes, the punishment in England is usually inflicted at a very short interval after the sentence. In America, there is usually allowed a very considerable interval, varying from one month to six months. In England and America, there lies no appeal from the verdict of a jury and the sentence of a court, in capital cases. In France, there may be a review of it in the court of cassation (q. v.). In Germany, there is, in criminal as in civil cases, a right of appeal; hence, in that country, few innocent persons have suffered capitally since the 16th century; and in England and America, the very fact that the verdict and sentence are final, produces great caution and deliberation in the administration of criminal justice, and a strong leaning towards the prisoner on trial. Capital punishment cannot be inflicted, by the general humanity of the laws of modern nations, upon persons who are insane or who are pregnant, until the latter are delivered and the former become sane. It is said that Frederick the Great required all judgments of his courts, condemning persons to death, to be written on blue paper; thus he was constantly reminded of them as they lay on his table among other papers, from which they were readily distinguished. He usually took a long time to consider such cases, and thus set an excellent example to sovereigns of their duty.

CAPITANATA; a province of Naples, bounded N. and E. by the Adriatic, S. by the country of Bari and Basilicata, and W. by the Molise. This was the ancient *Apulia Daunica*. The whole country is a vast plain, and the soil generally sandy, with few trees, and scarcely any springs or rivers of fresh water; yet the land produces a great deal of corn, and feeds a great number of cattle. Salt is made along the coast. The Gargano is the only mountain: on its sides are plantations of oranges. The coasts are defended by twenty-two towers. The principal towns are Lucera, Foggia, St Severo, and Volturara. Population, 254,809. Square miles, 3289. Manfredonia is the principal seaport. Capitanata forms what is generally called the *spur of Italy*.

CAPITANI, CAPATANS; the hereditary chieftains who have taken possession of the district of Maina, the mountainous country of the ancient Messenia. They exercised, under the Turkish government, an arbitrary jurisdiction, without any kind of responsibility. With the bey, whom they chose from among themselves, they formed a kind of great council. The bey took care that the *haratsch*, or poll-tax, was paid to the Turks, and was the agent in all dealings with the pacha. Generally the *capitani* were robber chieftains, who lived retired in rocky fastnesses, and defied the Turks and their neighbours. They united only if resistance against the Turks became necessary. At other times, they lived at war amongst themselves. From this wild oligarchy most of the generals of the modern Greeks have sprung up; their Colocotroni, Odysseus, Niketas (called *Turkophagus*) and others. The *palikaris*, or the Greek warriors, also called *klephtes* (i. e., robbers), followed the orders of the *capitani* as long as they had confidence in them, and met with good success. The French colonel Voutier has given us interesting information concerning them.

CAPITE CENSI were the Roman citizens, of the lowest class, who possessed no property. They had this name because they were counted by their heads, not by their property, in the divisions of the centuries.

CAPITOL, now *Campidoglio*; the citadel of ancient Rome, standing on the Capitoline hill, the smallest of the seven hills of Rome, anciently called the *Saturnine* and the *Tarpeian rock*. It was begun A. C. 614, by Tarquinius Priscus, but not completed till after the expulsion of the kings. At the time of the civil commotions under Sylla it was burned down, and rebuilt by the senate. It again suffered the same fate twice, and was restored by Vespasian and Domitian. The latter caused it to be built with great splendour, and instituted there the Capitoline games. Dionysius says the temple, with the exterior pillars, was 200 feet long and 185 broad. The whole building consisted of three temples, which were dedicated to Jupiter, Juno, and Minerva, and separated from one another by walls. In the wide portico, triumphal banquets were given to the people. The statue of Jupiter, in the capitol, represented him sitting on a throne of ivory and gold, and consisted in the earliest times of clay painted red. Under Trajan, it was formed of gold. The roof of the temple was made of bronze: it was gilded by Quintus Catulus. The doors were of the same metal. Splendour and expense were lavished upon the whole edifice. The gilding alone cost 12,000 talents (above £2,000,000), for which reason the Romans called it the *golden capitol*. On the pediment stood a chariot, drawn by four horses, at first of clay, and afterwards of gilded brass. The temple itself contained an immense quantity of the most magnificent presents. The most important state papers, and particularly the Sibylline books were preserved in it. The present capitol (Campidoglio), standing near, and partly on, the site of the old one, is a modern edifice, after the design of Michael Angelo. The principal entrance to it commands a most splendid prospect: but the buildings, as connoiseurs tell us, are among Michael Angelo's inferior works. The modern capitol consists of three buildings (in the principal one resides the senator of Rome), which do not, however, cover the whole Capitoline mount. On the ruins of the former temple of Jupiter Capitolinus, of which some pillars are still to be found, a Franciscan church is now erected. The present capitol is one of the most interesting spots in Rome. From the summit of the middle building, the spectator has a splendid view of one of the most remarkable regions in the world—the Campagna up to the mountains. The museums contain some of the finest collections of statues and paintings. The stairs leading up to the equestrian statue of Marcus Aurelius are beautiful. Everything contributes to render the capitol venerable and interesting.—The name of *capitol* is also given to the edifice in Washington, where congress assembles. Some of the states of North America also call their state-houses *capitols*.

CAPITULARY. The word *capitulary* is generic, and denotes every kind of literary composition divided into chapters. Laws of this description were promulgated by Childebert, Clothaire, Carloman, and Pepin, kings of France; but no sovereign seems to have put forth so many of them as the emperor Charlemagne, who appears to have wished

to effect, in a certain degree, an uniformity of law throughout his extensive dominions. With this view, it is supposed, he added to the existing codes of feudal laws many other laws, divided into capitularies, or small chapters or heads, sometimes to explain, sometimes to amend, and sometimes to reconcile or remove the difference between them. They were generally promulgated in public assemblies, composed of the sovereign and the chief men of the nation, both ecclesiastical and secular. They regulated equally the spiritual and temporal administration of the kingdom; and the execution of them was intrusted to the bishops, the courts, and the *missi regii*, officers so called because they were sent, by the French kings of the first and second race, to dispense law and justice in the provinces. Many copies of these capitularies were made, one of which was generally preserved in the royal archives. The authority of the capitularies was very extensive. It prevailed in every kingdom under the dominion of the Franks, and was submitted to in many parts of Italy and Germany. The earliest collection of the capitularies is that of Angesise, abbot of Fontenelles. It was adopted by Louis the Debonnaire and Charles the Bald, and was publicly approved of in many councils of France and Germany. But, as Angesise had omitted many capitularies in his collection, Benedict, the Levite or deacon of the church of Mentz, added three books to them. Each of the collections was considered to be authentic, and of course was appealed to as law. Subsequent additions have been made to them. The best edition of them is that of Baluze, in 1697. The capitularies remained in force in Italy longer than in Germany, and in France longer than in Italy. The incursions of the Normans, the intestine confusion and weakness of the government under the successors of Charlemagne, and, above all, the publication of the epitome of canon law, termed the *Decretum of Gratian*, in the year 1150, which totally superseded them in all religious concerns, put an end to their authority in France. Butler's *Horæ Juridicæ Subsecivæ*, p. 128—131.

CAPITULATION formerly signified a writing drawn up in heads; now commonly used, in military language, to signify the act of surrendering to an enemy upon stipulated terms, in opposition to *surrender at discretion*. In the fifteenth century, *capitulations*, as they were called, were presented by the ecclesiastical establishments in Germany to their newly chosen abbots and bishops, who were obliged to swear to observe them as laws and conditions for their future rule. The ecclesiastical electors obtained, after the fall of the Hohenstaufen family, certain advantageous promises from the new emperors, which were called *capitulations*. When Charles V. was proposed as emperor, and it was apprehended, on account of his foreign education, that he would disregard the German constitution, he was obliged to make oath, that he would not reside without the German empire, nor appoint foreigners to office in the empire, &c. This was called his *election capitulation*. Such a *Wahlcapitulation* was afterwards presented to every new emperor, as a fundamental law of the empire, and shook the constitution of the German government to its very foundations, since the electors, at the choice of every new emperor, made some new infringement on the imperial privileges. The *Wahlcapitulationen* were acknowledged bargains, certainly unique in history.

CAPNIST, or KAPNIST, Wassil Wassiljewitsch, Russian counsellor of state, member of the academy of St Petersburg and other learned societies, one of the first lyric poets of Russia, born in 1756, was the rival of his friend and relation, the celebrated poet Derschavin (q. v.) He translated Horace with applause. The collection of his works appeared at Petersburg in 1806 (Lyric Poems, by Wassil Capnist). He wrote a comedy, called *Jabeda*, in 1799, and a tragedy, called *Antigone*, in 1815. His critique on Homer's Odyssey, published in Russian and French, is more acute than profound. His odes have not the easy and bold character by which those of Derschavin are distinguished, but they have a charm of another kind. Purity of style, richness of thought, and a sound philosophy, connected with deep and genuine feeling, are Capnist's characteristic traits. Some years ago, he retired to Obuchowka, his country-seat, in Little Russia, where he lived devoted to the muses till his death, which took place Oct. 28, 1823, in his sixty-seventh year.

CAPO D'ISTRIA (the ancient *Ægida*); a seaport of Austria, on the gulf of Trieste, eight miles south of Trieste; lon. 13° 43′ E.; lat. 45° 31′ N.; population 5,119; is a bishop's see, and the capital of a district, containing 65,150 inhabitants. The town is two miles in circumference, and has, besides the cathedral, thirty other churches, six convents, hospitals, and other public buildings.

CAPO D'ISTRIA, John, count of, formerly Russian secretary of state, afterwards president of Greece, was born at Corfu, 1780, where his father was a physician, and studied medicine at Venice. When the Russian troops occupied the Ionian islands, in 1799, Anthony Maria de Capo d'Istria, his father, was at the head of the government. But, after the islands were again made dependent on France, in 1807, in consequence of the peace of Tilsit, he entered into the Russian service. He afterwards returned to Corfu, became a senator there, and died, April 17, 1821, aged eighty years. The son still continued in Russia, where he was first employed in the office of count Rumanzoff, and afterwards went as Russian ambassador to Vienna. In 1812, he conducted the diplomatic business of the army of the Danube, of which admiral Tschitschagoff was commander-in-chief. When this army was united with the great Russian army, after the retreat of the French, Capo d'Istria managed the diplomatic correspondence at head-quarters, under the emperor's direction, and soon gained the confidence of his monarch to such a degree, that he was afterwards engaged in the most important public business, and appointed secretary of state for the department of foreign affairs. He was made grand-cross of the Wladimir order, knight of St Ann, grand-cross of the royal Austrian Leopold order, and of the Prussian order of the red eagle. In 1813 he was Russian ambassador to Switzerland, negotiated with the Austrian ambassadors the new relations of this republic, and, in Sept., 1814, was present at the congress of Vienna as Russian plenipotentiary, from which the downfall of Napoleon, in 1815, recalled him to the head-quarters of the allies at Paris. As imperial Russian plenipotentiary, he subscribed the treaty of Paris, Nov. 20, 1815, and returned with his monarch to Petersburg, where he took a very active part in the business of the council of state. His endeavours for the restoration of the republic of the Ionian islands, for the support of the established religion in Russia against the intrigues of the Jesuits, and for the deliverance of the Greeks from the Turkish yoke, are well known. But, as Russia disapproved of the attempts of the Greeks, and Stroganoff returned from his mission to Constantinople, in 1822 count Capo d'Istria left the public service, and retired, as a private man, to Germany and Switzerland, living chiefly at Geneva, till the year 1827, when he was elected president of the Greek republic. Whether from his attachment to Russian interests, or from the

jealousy and impatience of restraint of the chiefs, Capo d'Istria speedily became extremely unpopular; and the islands and the province of Maina placed themselves, in the spring of 1831, in the attitude of open resistance to the government. Miaulis, Mavrocordato, and Conduriottis demanded a convocation of the national assembly, the establishment of the liberty of the press, and the release of certain state prisoners, among whom was Mavromichalis. A provisional government was established, under these leaders, and the insurgents took possession of Poros, with the Hellas and the rest of the Greek fleet lying in that harbour. In August, a Russian fleet appeared off Poros, which stood in to attack the ships, while the troops of the president attacked the town. Miaulis, however, blew up the ships, to prevent their falling into the hands of the Russians; and the troops of the president, which found Poros deserted by its inhabitants, reduced it to ashes. Meanwhile, the Mainots were acting against the government by land; but the appearance of the Russian fleet in the gulf of Coron obliged Miaulis, who had been co-operating with the Mainots with a small squadron, to destroy it, as he had previously done the Greek fleet in Poros. In October, George, the son, and Constantine, the brother of Pietro Mavromichalis, repaired to Napoli di Romania, for the purpose of assassinating the president; and they accomplished their object on the ninth, at the door of the church. The one discharged a pistol at his head, the other stabbed him in the back, and he fell dead upon the spot. Constantine was immediately put to death by the bystanders, and George was detained in custody.

CAPOC; a sort of cotton, so short and fine that it cannot be spun. It is used in the East Indies to line palanquins, to make beds, mattresses, &c.

CAPONIER, or CAPONNIERE, in fortresses; a place which is covered against the fire of the enemy, on the sides, sometimes also above, and serves for the connexion of two works, or for maintaining an important point. In particular—1. a passage secured by two parapets, in the form of *glacis*, which leads through the dry ditch, from one work to another; for instance, from the chief wall to the ravelin. If danger is to be apprehended only from one side, and consequently only one parapet is made, it is called a *demi-caponniere:* if it is covered above with hurdles or with wood, it is called a *coffer:* but this word is often used indifferently for *caponniere.*—2. Small block-houses in the covered way, for its defence. Coehorn laid out similar, but less useful works below the glacis, and Scharnhorst proposes them, under the name of *field-caponnieres,* for the salient angles of field fortification.

CAPPADOCIA, in antiquity; one of the most important provinces in Asia, once a famous kingdom; bounded W. by Lycaonia, S. by Cilicia and Syria, E. by Armenia, and N. by the Pontus Euxinus. In the period of the Persian government, Cappadocia comprehended all the country between the Halys and Euphrates. By the former river, it was separated from Phrygia and Paphlagonia; by the latter, from Armenia: therefore the region afterwards called *Pontus* was comprehended in this territory. The Persians divided it, according to Strabo, into two satrapies, which bore the name of *Cappadocia Magna,* afterwards *Cappadocia Proper*; and *Cappadocia Minor,* afterwards *Pontus.* This division, however, was not always strictly observed. The Persian satraps governed, at a later time, under the title of *kings,* and sometimes made themselves independent. At the time of the famous retreat of the 10,000 Greeks, both the Cappadocias seem to have been under the rule of Mithridates, who had participated in the conspiracy of Cyrus the Younger, but retained his government, and became, after the defeat of Cyrus, again dependent upon the kings of Persia. Cappadocia Magna was a poorly cultivated country, little favoured by nature, the plains of which were only fit for breeding sheep. The climate was rough, and, wood being scarce, the habitations of the people were low and mean. Even the capital, Mazaca, was more like a camp than a city. The Cappadocians, also called *Leukosyri* (the White Syrians), because they had a language resembling the Syrian, were considered stupid and ill-tempered.

CAPREA, or CAPREÆ. See *Capri.*

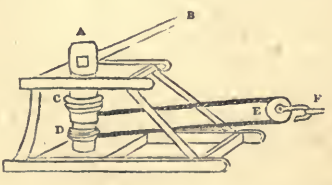
CAPRI; an island in the beautiful gulf of Naples, which contributes not a little to the charms of this favourite scene of nature. Capri, five miles long and two broad, lies at the entrance of the gulf, and consists of two mountains of limestone, remarkable for their picturesque shape, and a well-cultivated valley. The inhabitants, amounting to 3000, are occupied in the production of oil and wine, in fishing and in catching quails, which come in immense numbers from Africa to the shores of Italy. Every spot on the island which can be made productive, is cultivated. In fact, agriculture all around Naples is in the highest state of perfection. The town of Capri (lon. 14° 8′ E.; lat. 40° 11′ N.) is the seat of a bishop, to whom all the quails belong. A high rock separates Capri from Anacapri, 1600 feet high, with 3500 inhabitants, to which a stairway in the rock, of 522 steps, leads from the lower part of the island. With the Romans, Capri was called *Capreæ.* Augustus obtained it by exchange from the Neapolitans, and made it a place of agreeable retreat, but never made use of it. Tiberius spent here the last seven years of his life in degrading voluptuousness and infamous cruelty. The ruins of his palace are still extant, and other ruins are scattered over the island.

CAPRICCIO. *Caprice* is the name applied to a sort of musical composition, in which the composer follows the bent of his humour. The *capriccio* may be used with propriety in pieces for exercise, in which the strangest and most difficult figures may be introduced, if they are not at variance with the nature of the instrument or of the voice.

CAPRIFICATION. See *Figs.*

CAPSICIN. Cayenne pepper contains a peculiar substance, discovered by Forchhammer, and called *capsicin* by Dr C. Conwell, which, according to the latter, when perfectly pure, is tasteless, inodorous, and crystallizes in acicular fragments. It is neither acid nor alkaline.

CAPSTAN, in shipping (in French, *cabestan;* Dutch, *kapstani*); a strong, massy column of timber, in the form of a truncated cone, and having its upper extremity divided into several squares, with holes in them to receive bars or levers. Those used in ships are let down perpendicularly through the deck, and fixed in such a manner that the men, by turning them horizontally with their bars, are able to weigh the anchors, and to perform other work requiring great exertion. A very simple and effective form of this machine is represented by the accompanying cut; where AD is a barrel composed of



two cylinders, differing in diameter. On the extremity of the cylinder at D, the rope CED is fixed, passing round the pulley E, which is attached to the weight to be lifted by means of the hook F, the rope being coiled round the larger cylinder, so that while the bar B urges the barrel round, the rope untwines itself from the larger barrel, and passes round the smaller one. To ascertain the power of the capstan, let us suppose the diameter of the barrel C is 21 inches, those of the under cylinder and pulley each 20 inches. Since the diameters of the two barrels are to one another as 21 to 20, the circumferences will be in round numbers as 63 to 60, therefore there will be 63 — 60 = 3 inches of rope coiled more than was uncoiled, and the half of this, or 1½ inches, will be the space through which the weight has been raised; and, knowing the length of the bar, it is easy to determine through what space the power moves; and as this is greater than the space through which the weight has moved, so will the power of the capstan be. The great advantage of this form of the machine, which seems to be of Chinese origin, is, that it has no recoil.

CAPTAIN. This is one of those many words derived from the Latin of the middle ages, and now to be found in all the different idioms of Europe. *Captain* comes from the Latin *capitaneus*, from *caput*, head, and signified, first, a governor of a province, who, in the first half of the middle ages, was generally a military man. Thus the word *captain* soon came to be used chiefly to denote a high, or rather the highest, military officer. Opitz, an early German poet, calls God, *Lord, Master, Captain*; and, in English, Christ is called the *Captain of our salvation*. Like many other words, however, this has, in the course of time, lost much of its dignity, and in military technology, now signifies the commander of a small body, a company; and in maritime language, the master of a vessel. In Britain and America, the master of the smallest craft, and even the chief man on a raft is styled *captain*. In the latter part of the middle ages, when armies were not yet so regularly divided and subdivided as at the present time, captains were the commanders of those small bodies of which the armies consisted. These were generally collected by their commander, who entered, with his company, into the service where most pay or most booty could be obtained. The practice of carrying on wars, by troops collected in this manner, prevailed to the greatest extent in Italy, where the continual quarrels of the numerous small states afforded ample employment to the unsettled and the dissolute. These companies play an important part in the history of the middle ages, particularly that of the two centuries preceding the reformation, and had a very important influence on the manners and morals of the south of Europe. They are further interesting to the student of history, because they are so unlike any thing at present existing. We refer the reader, for some further remarks on this subject, to an able article on Macchiavelli, in the Edinburgh Review, March, 1827.

Captain, in modern armies, is the commander of a company of foot, or a troop of horse. In the British army, he appoints the serjeants, corporals, and lance-corporals of his company—a right which belongs, in other armies, to the commander of the regiment. In the horse and foot-guards, the captains have the rank of lieutenant-colonels in the army. In the French army, besides the commanders of the companies of the line, commanders of certain detached bodies of guards, &c., are called *captains*, and have, sometimes, a very high rank in the army.

Captain-lieutenant is, in the British army, a lieutenant, who, with the rank of captain, commands a troop or company in the name of some other person. Thus, the colonel being usually captain of the first company of his regiment, that company is commanded by his deputy as captain-lieutenant.

Captain of a merchant ship; he who has the direction of the ship, her crew, lading, &c. In small vessels he is more ordinarily called *master*. In the Mediterranean he is called *patroon*.

Post-captain; a British officer commanding any man-of-war, from a ship of the line down to a ship-rigged sloop. Formerly a twenty-gun ship was the smallest that gave post-rank; but, by a late regulation, the largest class of ship-sloops has been added to the list of post-ships; and post-captains, under three years' standing, are now appointed to them, unless they happen to be selected as flag-captains to admirals' ships. After being three years posted, they are appointed to frigates, which they may continue to command till they are of ten years' standing, when they are generally removed to fifty or sixty-four gun ships, preparatory to their taking the command of ships of the line.

Captain-general signifies, in England, the first military rank, power, and authority in the realm; therefore the king is, by the constitution, captain-general, or generalissimo, of all the forces in the United Kingdoms. In 1799 the king delegated this rank, with the powers annexed to it, to the duke of York. In France it is an ancient title, which conferred an almost unlimited power on the person who possessed it, in the district where he commanded. But it never corresponded to that of *generalissimo* except in the case of the duke of Savoy, in 1635, in the time of Louis XIII. The count de Tessé was French captain-general in Italy in 1702. The title is not in use at present, nor would it agree with the existing organization of the administration. In Spain the rank of a captain-general corresponds with that of a marshal of France, who has the command of an army. This title was also given to the head of a province, in the Spanish colonies in South America, which was divided into viceroyalties and captain-generalships (*capitanias-generales*); thus Chili was a captain-generalship. The captain-generals were not placed under the viceroys, but accountable only to the king, through the council of the Indies. The captain-general of Venezuela, for instance, had no connexion with the viceroy of New Grenada. They decided, in the last instance, on all legislative, judicial, and military affairs, and presided in the *real audiencia*. The time during which these governors remained in power was limited to a few years, probably in order to prevent them from becoming too powerful. The consequence was, that the colonies were oppressed the more to enrich the governors, for rich every one was when he left his office.

CAPTURE. See *Prize*.

CAPUA; a fortified place in the Terra di Lavoro, in the kingdom of Naples, on the Volturno; the see of an archbishop; contains a military school, and 7300 inhabitants; one league distant from the ancient Capua, out of the ruins of which it was partly built, in the 9th century; lon. 14° 8′ E.; lat. 41° 5′ N.; fifteen miles north of Naples. There are twelve convents in this city. Jan. 11, 1797, it was taken by the French, and, in 1820, it did not resist the Austrians. The ancient Capua, one of the finest and most agreeable cities of Italy, was so important, that it was compared to Rome and Carthage. Hannibal went into quarters here, after the battle of Cannæ, and promised to make the city the capital of Italy. Capua therefore formed an alliance with him, but was reconquered five years after. The Vandals laid it waste. Narses restored it, but the Lombards devastated it again. There are still many ruins here.

Around Capua lie the fertile Campanian fields, which produced three crops a-year. Living was cheap here, and the climate healthy, so that it was a favourite place of resort of the Romans.

CAPUCHINS; religious of the order of St Francis. See *Franciscans*.

CAPUT-MORTUUM (*dead head*); a technical expression, in chemistry, for the deposit in the retort, arising from dry distillation; because, if the operation is continued, volatile substances cease to be given off.

CAQUETA; a large river in South America, which rises about sixty miles south of Popayan. Being enlarged by the addition of several streams, it takes a course due east about 300 miles, when it divides into three branches, one of which falls into the Ica; another takes the name of Yupura, and the third forms the principal stream of the Negro.

CARABINE; formerly, a kind of guns, which are now out of use. At present, short guns used by the cavalry, have this name. Tacticians entertain very different opinions respecting this kind of arms. Some think that they are of no use whatever, as the aim from on horseback is extremely uncertain. In some armies, every third man of certain regiments of cavalry is armed with a carabine. The word *carabine* is found in all European languages, with different endings only. Many derive the word from *Calabria*, which, for a long time, was famous for a certain light cavalry. The transformation of the *l* into *r* would not be extraordinary. Du Fresne derives the word from a kind of arms called *chavarina*, of which mention is made in the fourteenth century.

CARABOBO; a province of Colombia, forming, according to the law of June 23, 1824, with the province Caracas, the department of Venezuela. The residence of the governor of Carabobo is Valencia. This name has been rendered famous by the battle of Carabobo, which was decisive of the independence of Colombia. It was fought June 24, 1821, soon after the armistice concluded between Bolivar and Morillo had expired. Bolivar, having formed a junction with Paez in Varinas, advanced to attack the Spanish general La Torre, who had taken a strong position upon the heights commanding the only pass by which his army could be approached. The battle was commenced by Paez, who led on his division in person, and, by the valour and impetuosity of himself and his followers, drove the Spaniards from their intrenchments, and thus gained a complete victory, before the second division, under general Cedeno, came up. Of all the troops, the British, in the service of the republic, distinguished themselves most: they chiefly decided the day, and suffered most severely. The battalion in which most of the British and Irish served received the name of *battalion of Carabobo*. Caracas, La Guayra, Carthagena, Cumana, and all that portion of Venezuela which is dependent upon them, were permanently secured to the patriots by this victory.

CARACALLA, Antoninus Bassianus, eldest son of the emperor Severus, was born at Lyons, A.D. 188, and appointed by his father his colleague in the government, at the age of thirteen years. Nevertheless, he attempted his life. Severus died A.D. 211. He was succeeded by Caracalla and Geta. The two brothers, from their earliest years, hated one another inveterately. After a campaign against the Caledonians, they concluded a disgraceful peace. They then wished to divide the empire between them; but their design was opposed by their mother, Julia, and by the principal men of the state. Caracalla now resolved to get rid of his brother, by causing him to be assassinated. After many unsuccessful attempts, he pretended to desire a reconciliation, and requested his mother to procure him an interview with his brother in private in her chamber. Geta appeared, and was stabbed in his mother's arms, A. D. 212, by several centurions, who had received orders to this effect. The prætorian guards were prevailed upon, by rich donations, to proclaim Caracalla sole emperor, and to declare Geta an enemy to the state. The tyrant caused Geta's children and friends to be put to death. (See *Papinian*.) Dion estimated the number of victims at 20,000. He afterwards executed many of the murderers of his brother, and caused him to be placed among the gods. His pattern was Sylla, whose tomb he restored and adorned. Like this dictator, he enriched the soldiers with the most extravagant largesses, which extortion enabled him to furnish. Cruel as Caligula and Nero, but weaker than either, he regarded the senate and the people with equal contempt and hatred. From motives of avarice, he gave all the freemen of the empire the right of citizenship, and was the first who received Egyptians into the senate. Alexander, whose habits he imitated, and Achilles, were the objects of his deepest veneration. He went to Ilium to visit the grave of Homer's hero, and poisoned his favourite freedman, named *Festus*, to imitate Achilles in his grief for Patroclus. His conduct in his campaigns in Gaul, where he committed all sorts of cruelties, was still more degrading. He marched over the Rhine to the countries of the Catti and Alemanni. The Catti defeated him, and permitted him to repass the river only on condition of paying them a large sum of money. He marched through the land of the Alemanni as an ally, and built several fortifications. He then called together the young men of the tribe, as if he intended to take them into his service, and caused his own troops to surround them and cut them in pieces. For this barbarous exploit, he assumed the name *Alemannicus*. In Dacia he gained some advantages over the Goths. He signed a treaty of peace at Antioch with Artabanus, the Parthian king, who submitted to all his demands. He invited to Antioch Abgares, the king of Edessa, an ally of the Romans, loaded him with chains, and took possession of his states. He exercised the same treachery towards Vologeses, king of Armenia; but the Armenians flew to arms, and repulsed the Romans. After this, Caracalla went to Alexandria, to punish the people of the city for ridiculing him. While preparations were making for a great massacre, he offered hecatombs to Serapis, and visited the tomb of Alexander, on which he left his imperial ornaments, by way of offering. He afterwards devoted the inhabitants, for several days and nights, to plunder and butchery, and seated himself, in order to have a view of the bloody spectacle, on the top of the temple of Serapis, where he consecrated the dagger which he had drawn, some years before, against his brother. His desire to triumph over the Parthians induced him to violate the peace, under the pretence that Artabanus had refused him his daughter in marriage. He found the country undefended, ravaged it, marched through Media, and approached the capital. The Parthians, who had retired beyond the Tigris to the mountains, were preparing to attack the Romans, the following year, with all their forces. Caracalla returned without delay to Mesopotamia, without having even seen the Parthians. When the senate received from him information of the submission of the East, they decreed him a triumph, and the surname *Parthicus*. Being informed of the warlike preparations of the Parthians, he prepared to renew the contest; but Macrinus, the pretorian prefect, whom he had offended, assassinated him at Edessa, A. D. 217, on his way to the temple of Lunus. Caracalla erected at Rome some splendid monuments, magnificent baths, which bear his name, and a triumphal arch, in commemoration of the achievements of Severus.

CARACAS; a province, which, with the province of Carabobo, constitutes, according to the law of June 23, 1824, the department of Venezuela, one of the twelve departments of Colombia. (See *Venezuela.*) The city of Caracas, or Leon de Caracas, is the capital of the department of Venezuela, formerly a captain-generalship; lon. 67° 5′ W.; lat. 10° 31′ N. In 1812, the population was estimated at 50,000. March 26 of that year, the city was partly destroyed by an earthquake, and nearly 12,000 persons were buried in the ruins. By the political events which followed this catastrophe, the population of this ill-fated city was reduced, in four or five years, to less than 25,000. The city is situated five leagues from the sea, from which it is separated by a chain of mountains, at an elevation of 3000 feet above the ocean. A good road traverses the mountains to the port La Guayra. Caracas carried on a considerable trade. The greatest part of the productions of the whole province, consisting principally of cocoa, coffee, indigo, cotton, sarsaparilla; and the Varinas tobacco, is brought here for sale, or to be exchanged for European manufactures and productions. The temperature is generally between 77° and 90° Fahr. in the day, and between 68° and 72° at night; but this general mildness is connected with great fluctuations in the weather. Humboldt, among the vapours of November and December, could sometimes hardly fancy himself in one of the temperate valleys of the torrid zone, the weather rather resembling that of the north of Germany. Caracas is the seat of the intendant of Venezuela, and has a college, a court of justice, nine churches, and five convents. The streets are straight and well built, intersecting each other at right-angles, at a distance of about 300 feet. The inhabitants consist of whites, descendants of Spaniards, free coloured people, a few slaves, and Indians. The first are either merchants, planters, professional or military men, very proud, and disdaining all kinds of labour. The women are considered very handsome, having large black eyes, full of expression, jet-black hair, and fine complexions; but they are careless of their figures. They seldom leave their houses except to go to mass, when they wear the long veils called *mantillas*, covering nearly the whole body. They possess considerable natural talent and vivacity, but little or no accomplishments. Caracas, as is well known, has been conspicuous throughout the revolution of Venezuela and New Grenada against Spain.

CARACCI. See *Carracci.*

CARACCIOLI, Louis Antoine de; born in 1721, at Paris, of an ancient and distinguished Neapolitan family. His talents for conversation procured him a distinguished reception, in Rome, from Benedict XIV. and Clement XIII. He afterwards went to Germany and Poland. After having educated the children of prince Rzewuski, in the latter country, he returned to Paris, and wrote his *Lettres du Pape Clément XIV.* (Ganganelli), which display a kind spirit, a benevolent philosophy, and fine taste. They also contain intelligent observations on many situations of life. For a long time, they were thought to be the genuine productions of the pope, and excited the greatest interest in France, and throughout Europe. He died in 1803.

CARACCIOLI, marquis de, the friend of Marmontel and D'Alembert, born in 1711, was, about the middle of the eighteenth century, Neapolitan ambassador in London and Paris. He was esteemed one of the first ornaments of the accomplished society of the capital of France. He died in 1789, in the office of viceroy of Sicily.

CARACCIOLI, Francisco, brother of the duke of Roccaromana, was distinguished as Neapolitan admiral, in 1793, at Toulon; but, being treated by his court with contempt, he entered the service of the Parthenopean republic, and repelled, with a few vessels, an attempt of the Sicilian-English fleet to effect a landing. When Ruffo took Naples in 1799 Caraccioli was arrested, contrary to the terms of capitulation, was condemned to death by the junta (see *Speziale*), was hanged at the mast of his frigate and thrown into the sea. His death is a blot on the fame of Nelson.

CARACTACUS; a king of the ancient British people called *Silures*, inhabiting South Wales. He defended his country seven years against the Romans, but was at last defeated, and led in triumph to the emperor Claudius, then at York, where his noble behaviour and pathetic speech obtained him liberty, A.D. 52. Buchanan, Monipenny, and the other ancient Scottish historians, make this heroic prince one of the Scots monarchs.

CARAITES, or CARÆANS, among the Jews; those who reject the tradition of the Talmud, and hold merely to the letter of Scripture, in opposition to the Rabbinists. See *Rabbi.*

CARAMANIA; an interior province of Asiatic Turkey, east of Natolia, comprising about 35,000 square miles. It is intersected by the Kisil Jermak, which, after a course of about 350 miles, flows north into the Black sea. Caramania comprehends the ancient Pamphylia, and a great part of Cilicia, Pisidia and Cappadocia Minor. Bajazet united it to the Ottoman empire in 1488. The inhabitants carry on some trade with camels' hair, goats' wool and opium. The population probably does not exceed from 150 to 200,000. Cogni, or Konich (lat. 38° 10′ N., lon. 32° 25′ E., 308 miles east of Smyrna, and 150 north of the shore of the Mediterranean) is the capital. There is also a town of this province called *Caramania.*

CARAVAGGIO, Michael Angelo Amerighi, or Morigi, called *Michael Angelo da Caravaggio*, a celebrated painter, born at Caravaggio, in the Milanese, in 1569, was at first a journeyman mason, but soon applied himself to the study of painting, studied in Milan and Venice, and afterwards went to Rome, where he distinguished himself. He may be considered as the inventor of a manner which has had a crowd of imitators. His characteristic traits are vigour and truth of *chiaro-oscuro*, combined with excellent colouring. He was fond of introducing broad and deep masses of shade, whereby a great effect is given to the light. To aid him in producing this effect, the room in which he worked was illuminated by a skylight, and the walls were painted black. He excelled in the painting of naked figures. His faults are obvious. Narrow and servile imitation of nature was his highest aim. Annibal Caracci and Domenichino were, perhaps, less distinguished than Caravaggio during their lives, but after their death were ranked higher; because, without neglecting colouring and the study of nature they aimed at correctness of design, and dignity of conception. His violent character involved him in many difficulties. He died as early as 1609. The painters who have imitated him most are Manfredi, Valentin, and Ribeira, called *Espagnolet.*

CARAVAGGIO. See *Caldara.*

CARAVAN, or KARAVAN; a Persian word used to denote large companies which travel together in the Levant and in Africa, for the sake of security from robbers, having in view, principally, trade or pilgrimages. Such a company often have more than 1000 camels to carry their baggage and their goods. These walk in single file, so that the line is often a mile long. On account of the excessive heat, they travel mostly early in the morning. As every Mohammedan is obliged to visit the tomb

of Mohammed once at least during his life, caravans of pilgrims go to Mecca every year, from various places of meeting. The leader of such a caravan to Mecca, who carries with him some cannon for protection, is called *Emir Adge*. Trading caravans choose one of their own number for a leader, whom they call *Caravan Baschi*. Much information on the subject of caravans is to be found in the travels of Niebuhr, who made many journeys with them, and describes them, as it is well known, minutely and faithfully. For an account of some of the most important routes pursued by the caravans in Africa, see the article *Africa*.

CARAVAN TEA. See *Tea*.

CARAVANSARIES, in the East; a sort of inn, situated in countries where there are no cities or villages for a considerable extent, to furnish travellers with a shelter. Some of them are built with much splendour, though they are generally unfurnished, and the traveller is obliged to bring with him his bed and carpet. In many, the hospitality is gratuitous. It is common for a pious Mohammedan to establish, during his life or by will, one or several of such caravansaries. This kind of benevolence is considered peculiarly agreeable to the Deity, and promotive of the eternal happiness of the founder. Sometimes persons are kept in these establishments to show the way to the caravans for some distance. See *Khan*.

CARAWAY SEEDS (*fructus carvi*) are a stimulant and excitant, the fruit of a biennial plant (*carum carvi*, Linnæus), a native of Europe, growing particularly in the south of France.

CARBON. Charcoal, as we are familiar with it in common life, contains hydrogen and saline and metallic substances. Accordingly, it became necessary to introduce a peculiar term for its pure base, and the one adopted by chemists was *carbon*. This element, besides forming the inflammable matter of charcoal, exists largely in animal substances, and is extensively distributed in the mineral kingdom. The only body in which carbon has been found to exist in a state of absolute purity, is the diamond. This precious stone has always been esteemed as the most valuable of the gems, a superiority which it owes to its hardness, lustre, and high refractive power. Diamonds are brought from India and from Brazil. Those of India, which have been the longest known, are principally found in the kingdoms of Golconda and of Visiapour. Those of Brazil, discovered at the commencement of the seventeenth century, belong to the district of Serro-do-Frio. The situations in which they occur are such as to favour the idea of their recent formation; since they exist disseminated through a loose, ferruginous sandstone, or quite detached in a sandy soil; and, in both cases, are situated at no great depth below the surface. In Brazil, the conglomerate in which they exist is called *cascalho;* from which they are extracted by washing, in the same manner as gold. The diamond uniformly occurs crystalized, and presents a great variety of forms; all of which yield readily to mechanical division parallel to all the planes of the regular octohedron, which, therefore, is the form of the primary crystal, and under which figure it is sometimes found in nature. The faces of its crystals are very frequently curved, so as to communicate to them a rounded appearance. They are commonly limpid; and are either colourless, or of a yellowish, bluish, yellowish-brown, black-brown, Prussian blue, or rose-red colour. Specific gravity, 3·5. Its hardness is extreme; so that it can be worn down only by rubbing one diamond against another, and is polished only by the finer diamond powder.—The weight, and, consequently, the value of diamonds, are estimated in carats, one of which is equal to four grains; and the price of one diamond, compared with that of another of equal colour, transparency, and purity, is as the squares of the respective weights. The average price of rough diamonds, that are worth working, is about £2 for the first carat. The value of a cut diamond is equal to that of a rough diamond of double weight, exclusive of the price of workmanship; and the whole cost of a wrought diamond of

1 carat may be about 36 dollars, or £ 8			
2 carats	is	$2^2 \times$ £8	= 32
3 do.	is	$3^2 \times$ 8	= 72
4 do.	is	$4^2 \times$ 8	= 128
100 do.	is	$100^2 \times$ 8	= 80,000.

This rule, however, is not extended to diamonds of more than twenty carats. The larger ones are disposed of at prices inferior to their value by that computation. The snow-white diamond is most prized by the jeweller. When transparent, and free from cracks, it is said to be of the *first water*.—The following are some of the most extraordinary diamonds known:—one in the possession of the rajah of Mattan, in the island of Borneo, where it was found about a century ago: it is shaped like an egg, and is of the finest water: its weight is 367 carats, or 2 oz. 169 grs. Troy. Another is the celebrated Pitt diamond, now among the crown jewels of France, weighing 136 carats; another in the sceptre of the emperor of Russia, of the size of a pigeon's egg; and another in the possession of the Great Mogul, which is said to weigh 280, and which, in a rough state, weighed 793 carats.

From the fact that transparent inflammable bodies refract light in a ratio greater than their densities, Sir Isaac Newton conjectured that the diamond might consist of an unctuous matter coagulated. The Florentine academicians had rendered its combustibility probable, by exposing it to the solar rays of a powerful burning-glass, and observing that it gradually disappeared, or was consumed. Subsequent experiments settled the question, by proving, that the diamond lost none of its weight when calcined out of contact with the air; but, on the contrary, that it was dissipated when heated in contact with this fluid. It still remained, however, to be discovered, what was the true nature of the diamond. This was accomplished by Lavoisier, who enclosed diamonds in jars filled with atmospheric air or oxygen gas, and, after having caused them to disappear by the heat of a burning-glass, examined the air in the vessels. He found it to exhibit precisely the same properties as the air which results from the combustion of charcoal. This experiment was also performed by Morveau, who demonstrated the nature of the diamond by still another arrangement. A diamond was enclosed in a cavity made in a piece of pure, soft iron; a stopper of the same metal was driven into it, and the mass was put into a small crucible, which was covered, and this into a second; the space between them being filled with pure silicious sand. The whole was exposed, for some time, to an intense heat. When examined, the diamond had disappeared, and the iron, with which it had been in contact, was converted into steel. Now steel is a compound of iron and carbon; and, as the diamond was not visible, and as there was no source from which the carbon could have been obtained, the conclusion was unavoidable, that the diamond was pure carbon. Yet so different is this mineral from charcoal, that it was, for a time, imagined that it contained some other element than carbon; but the numerous and delicate experiments of Sir H. Davy, and several other chemists, failed of detecting any thing else in its composition; and, although there exists so great a differ-

ence between the diamond and charcoal, in their external properties, we are forced to believe that they are identically of the same nature. The diamond is, therefore, pure carbon, and differs from charcoal (leaving out of question its trifling impurities) only in the arrangement of its molecules.

The substance in which carbon exists next in purity is charcoal. For common purposes this is prepared by piling billets of wood in a pyramidical form, with vacuities between them for the admission of air, covering them with earth, and inflaming them. In consequence of the heat, part of the combustible substance is consumed, part is volatilized, together with a portion of water, and there remains behind the ligneous fibre only of the wood, in the form of a black, brittle, and porous body. When required pure, and in small quantities, for the purposes of the chemist, it may be obtained by immersing the wood in sand contained in a crucible exposed to heat. According to the experiments of Messrs Allen and Pepys, the weight of charcoal obtained from 100 parts of different woods was as follows:—fir, 18·17; lignum vitæ, 17·25; box, 20·25; beech, 15; oak, 17·40; mahogany, 15·75.

Lampblack is charcoal in a state of minute division, and is prepared for the demands of trade from the dregs which remain after the eliquation of pitch, or else from small pieces of fir-wood, which are burned in furnaces of a peculiar construction, the smoke of which is made to pass through a long horizontal flue, terminating in a close, boarded chamber. The roof of this chamber is made of coarse cloth, through which the current of air escapes, while the soot, or lampblack, remains behind.—*Coke* is a peculiar kind of charcoal, which remains in the retort, after the heating of coal to procure the coal gas.

Ivory-black, or *animal charcoal*, is obtained from bones made red-hot in a covered crucible, and consists of charcoal mixed with the earthy matters of the bone.

Wood charcoal, well prepared, is of a deep-black colour, brittle and porous, tasteless and inodorous. It is infusible in any heat a furnace can raise; but, by the intense heat of a powerful galvanic apparatus, it is hardened, and at length is volatilized, presenting a surface with a distinct appearance of having undergone fusion. The density of charcoal, according to Mr Leslie, is little short of that of the diamond itself, although its specific gravity has usually been considered as low as 2·00. Charcoal is insoluble in water, and is not affected by it at low temperatures; hence wooden stakes, which are to be immersed in water, are often charred to preserve them.

Owing to its peculiarly porous texture, charcoal possesses the property of absorbing a large quantity of air, or other gases, at common temperatures, and of yielding the greater part of them when heated. It appears, from the researches of Saussure, that different gases are absorbed by it in different proportions. He found that charcoal prepared from box-wood absorbs, during the space of twenty-four or thirty-six hours, of

Ammoniacal gas,	90	times its volume;
Muriatic acid, .	85	do.
Carbonic acid, .	35	do.
Oxygen, . . .	9·25	do.
Hydrogen, . .	1·75	do.

Charcoal likewise absorbs the odoriferous and colouring principles of most animal and vegetable substances. Thus, all saline substances, which, from the adherence of vegetable or animal extractive matter, are of a brown colour,—as crude tartar, crude nitre, impure carbonate of ammonia, and other salts,—may, after being digested through the medium of water with charcoal be obtained white by a second crystallization. Resins, gum-resins, assafœtida, opium, balsams, essential oils, and many other substances, even those that have the strongest smell, are rendered nearly inodorous when they are rubbed with charcoal and water, or when solutions of them in alcohol are macerated with the charcoal, or filtrated repeatedly through it. A number of the vegetable tinctures and infusions also lose their colour, smell, and much of their taste, by the same process. Common vinegar, on being boiled with charcoal powder, becomes colourless. Malt spirit, by distillation with charcoal, is freed from its disagreeable flavour. In the same manner wines, also, become colourless, and distilled waters lose their odours. Water, which, from having been long kept in wooden vessels, as during long voyages, has acquired an offensive smell, is deprived of it by filtration through charcoal powder, or even by agitation with it for a few minutes, especially when a few drops of sulphuric acid have also been added. Hence, also, it has been found that, by charring the inside of casks for keeping water, it may be preserved a long time without spoiling. Charcoal can even remove or prevent the putrescence of animal matter. If a piece of flesh has become tainted, the taste and smell may, in a great measure, be removed, by rubbing it with charcoal powder; and it may be preserved fresh for some time by burying it in the same substance. To produce these effects, however, it is necessary that the charcoal should have been well calcined and newly prepared.

The uses of charcoal are extensive. It is used as fuel in various arts, where a strong heat is required without smoke, as in dyeing, and in various metallurgic operations. By cementation with charcoal, iron is converted into steel. It is used in the manufacture of gunpowder, in its finer state of aggregation, under the form of ivory-black, lamp-black, &c. It is the basis of black paint; and, mixed with fat oils and resinous matter, to give a due consistence, it forms the composition of printing ink. It is used to destroy colour and odour, particularly in sirups; to purify honey; to resist putrefaction; to confine heat, and for a number of other important purposes.

When charcoal is heated to a certain degree in the open air, or in oxygen gas, it takes fire, and burns with the production of an elastic vapour, which has been called *carbonic acid gas*. It is usually obtained, however, by other processes. It exists, combined with lime, in the different varieties of limestone, marble, and chalk; and, if any of these substances be exposed to a strong heat, the affinity of the acid to the lime is so far weakened, that it assumes the elastic form, and may be collected. An easier mode is also practised for effecting its disunion, through the affusion of one of the more powerful acids.

From the experiment of the direct formation of this acid, by the combustion of charcoal in oxygen gas, its composition has been determined to be 27·4 carbon and 72·6 oxygen. Tennant illustrated its nature analytically, by passing the vapour of phosphorus over chalk, or the carbonate of lime, heated to redness in a glass tube. The phosphorus took oxygen from the carbonic acid, charcoal, in the form of a light, black powder, was deposited, and the phosphoric acid, which was formed, united with the lime.

Carbonic acid is a colourless, inodorous, elastic fluid, which possesses all the physical properties of the gases in an eminent degree, and requires a pressure of thirty-six atmospheres to condense it into a liquid. Its specific gravity, compared with common air, is 1·5277. It extinguishes burning substances of all kinds, and is incapable of supporting the re-

spiration of animals, its presence, even in a moderate proportion, being soon fatal. An animal cannot live in air which contains sufficient carbonic acid for extinguishing a lighted candle; and hence the practical rule of letting down a burning taper into old wells or pits, before any one ventures to descend. When an attempt is made to inspire pure carbonic acid, a violent spasm of the glottis takes place, which prevents the gas from entering the lungs. If it be so much diluted with air, as to admit of its passing the glottis, it then acts as a narcotic poison on the system. It is this gas which so often proves destructive to persons sleeping in a confined room with a pan of burning charcoal. Lime-water becomes turbid when brought into contact with carbonic acid, from the union of the lime with the gas, and the insoluble nature of the compound thus formed. Hence, lime-water is not only a valuable test of the presence of carbonic acid, but is frequently used to withdraw it altogether from any gaseous mixture that contains it. Carbonic acid is absorbed by water. Recently-boiled water dissolves its own volume of carbonic acid, at the common temperature and pressure; but it will take up much more if the pressure be increased. Water and other liquids, which have been charged with carbonic acid under great pressure, lose the greater part of the gas when the pressure is removed. The effervescence which takes place on opening a bottle of ginger beer, cider, or brisk champaign, is owing to the escape of carbonic acid gas. Water which is fully saturated with carbonic acid gas sparkles when it is poured from one vessel to another. The solution has an agreeably acidulous taste, and gives to litmus paper a red stain, which is lost on exposure to the air. On the addition of lime-water to it, a cloudiness is produced, which at first disappears, because the carbonate of lime is soluble in an excess of carbonic acid; but a permanent precipitate ensues, when the free acid is neutralized by an additional quantity of lime-water. The water which contains carbonic acid in solution is wholly deprived of the gas by boiling. The agreeable pungency of beer, porter, and ale is, in a great measure, owing to the presence of carbonic acid; by the loss of which, on exposure to the air, they become stale. All kinds of spring and well-water contain carbonic acid, which they absorb from the atmosphere, and to which they are partly indebted for their agreeable flavour. Boiled water has an insipid taste, from the absence of carbonic acid. Carbonic acid is always present in the atmosphere, even at the summit of the highest mountains. Its origin is obvious. Besides being formed abundantly by the combustion of all substances which contain carbon, the respiration of animals is a fruitful source of it, as may be proved by breathing a few minutes into lime-water. It is also generated in all the spontaneous changes, to which dead animal and vegetable matters are subject. The carbonic acid proceeding from such sources is commonly diffused equably through the air; but, when any of these processes occur in low, confined situations, as in the galleries of mines or in wells, the gas is then apt to accumulate there, and form an atmosphere called *choke damp*, which proves fatal to any animals that are placed in it. These accumulations take place only where there is some local origin for the carbonic acid; for example, when it is generated by fermentative processes going on at the surface of the ground, or when it issues directly from the earth, as happens at the grotto del Cane, in Italy, and at Pyrmont, in Westphalia.

Though carbonic acid is the product of many natural operations, no increase of its quantity in the atmosphere is discoverable. Such an increase appears to be prevented by the process of vegetation. Growing plants purify the air by withdrawing carbonic acid, and yielding an equal volume of pure oxygen in return; but whether a full compensation for the deterioration of the air by respiration is produced in this way, has not, as yet, been satisfactorily determined.

Carbonic acid abounds in mineral springs, such as those of Tunbridge, Carlsbad, and Saratoga. In combination with lime, it forms extensive masses of rock, which occur in all countries, and in every formation. It unites with alkaline substances, and the salts so produced are called *carbonates*. Its acid properties are feeble, so that it is unable to neutralize completely the alkaline properties of potash, soda, and lithia. For the same reason, all the carbonates, without exception, are decomposed by the muriatic and all the stronger acids; the carbonic acid is displaced, and escapes in the form of gas.

Another gaseous compound of carbon with oxygen, called *carbonic oxide*, exists, or may be obtained by heating powdered chalk, or any carbonate which can bear a red heat without decomposition, with iron filings in a gun-barrel. It is evolved together with carbonic acid gas, from which it may be freed by agitating the mixed gases with lime-water, when the carbonic acid is absorbed, and the gas in question is left in a state of purity. It is colourless and insipid. Lime-water does not absorb it, nor is its transparency affected by it. When a lighted taper is introduced into a jar of carbonic oxyde, it takes fire, and burns calmly at its surface, with a lambent, blue flame. It is incapable of supporting respiration. A mixture of 100 measures of carbonic oxyde, and rather more than 50 of oxygen, on being exploded in Volta's eudiometer by electricity, disappear, and 100 measures of carbonic acid gas occupy their place; from which the exact composition of carbonic oxyde is easily deduced. For carbonic acid contains its own bulk of oxygen; and, since 100 measures of carbonic oxyde, with 50 of oxygen, form 100 measures of carbonic acid, it follows that 100 of carbonic oxyde are composed of 50 of oxygen, united with precisely the same quantity of carbon acid as is contained in 100 measures of carbonic acid. Consequently, the composition of carbonic acid being,

By volume.

Vapour of carbon,	100
Oxygen gas, . . .	100
	100 carbonic acid gas,

By weight,

Carbon, ...	6
Oxygen, ...	16
	22 carbonic acid,

that of carbonic oxyde must be,

By volume,

Vapour of carbon,	100
Oxygen gas, . . .	50
	100 carbonic oxyde gas,

By weight,

Carbon, ...	6
Oxygen, ...	8
	14 carbonic oxyde.

Its specific gravity is 0·9721.

The process for generating carbonic oxyde will now be intelligible. The principle of the method is to bring carbonic acid, at a red-heat, in contact with some substance which has a strong affinity for oxygen. This condition is fulfilled by igniting chalk, or any of the carbonates, with half its weight of iron filings, or of charcoal. The carbonate is reduced to its caustic state, and the carbonic acid is converted into carbonic oxyde by yielding oxygen to the iron

or the charcoal. When the first is used, an oxyde of iron is the product; when charcoal is employed, the charcoal itself is converted into carbonic oxyde.

CARBONARI (*colliers*); the name of a large political secret society in Italy. According to the Memoirs of the Secret Societies of the South of Italy, particularly the Carbonari, translated from the Original Manuscript (London, 1821), it emerged from its former obscurity in 1818. It has published instructions, catechisms of the different degrees, statutes, rituals, and so on, which give, however, only a partial view of the subject, without entering into the secret motives of the leaders, and the real spirit of the whole society. They have a tradition that they were founded by Francis I. of France, on which account they drink to his memory at their festivals. It is evidently going too far to associate them with the disturbances among the German peasantry in the beginning of the 16th century, or to look for their origin in the oppressive forest laws of the Norman kings of England. If, however, as their antiquity is not to be disputed, they could be proved to be a branch of the Waldenses, their religious character, which aims at evangelical purity and a rejection of traditions, would be best accounted for. According to Botta's *Histoire d'Italie*, the republicans fled, under the reign of Joachim (Murat) to the recesses of the Abruzzi, inspired with an equal hatred of the French and of Ferdinand. They formed a secret confederacy, and called themselves *colliers*. Their chief, Capobianco, possessed great talents as an orator. The war-cry—"Revenge for the land crushed by the wolf!"—revealed the objects of the society. Ferdinand and Caroline endeavoured to obtain their assistance against the French. Prince Moliterni himself a republican at heart, was sent to them for this purpose. Count Orloff, in his work on Naples, ascribes the foundation or revival of the Carbonari to queen Caroline of Naples: others assert that Maghella, the former minister of police, gave this society its present importance. Maghella, a native Genoese, was made minister of police in the time of the Ligurian republic, and, after it was united with France, director of the tobacco monopoly. When Murat ascended the throne of Naples, he employed him in the department of police, and, after the lapse of some time, appointed him minister. All his efforts were directed to the union and independence of Italy; and, for this purpose, he made use of the society of the Carbonari, which he reformed and extended. In 1812, he urged his sovereign to make himself independent of Napoleon, and to raise the standard of liberty and independence in Italy. Murat was supported by the Carbonari (who desired a constitution) only during the short intervals in which it was hoped that he would act according to these suggestions. In the sequel, he informed his brother-in-law, Napoleon, of the designs of Maghella, and delivered him, as a native Genoese, to France, where he lived, for some time, under the superintendence of the police. In 1815, he returned to Italy, and exerted his influence chiefly in the States of the Church, then occupied by Murat. After the expulsion of Murat by the Austrian armies, he was first carried to a Hungarian fortress, afterwards delivered to the king of Sardinia, imprisoned for a year, in Fenestrelles, and then set at liberty. The ritual of the Carbonari is taken from the colliery. Clearing the wood of wolves (opposition to tyranny) is the basis of their symbols. By this, they are said to have meant, at first, only deliverance from foreign dominion; but, in later times, democratical and anti-monarchical principles have sprung up, which were probably discussed chiefly among the higher degrees of the order. They call one another *good cousins*. Those of the second degree are called *Pythagoreans*, and the oath of admission is, "Hatred to all tyrants!" Of the third degree, whose existence cannot be doubted, little is known. There are even traces of a fourth degree. A general union of the order under a common head seems not to have been effected. The separate societies in the small towns entered into a connexion with each other; but this union extended no farther than the province. The place of assembly is called the *hut* (*barraca*): the exterior parts are called the *wood;* the interior of the hut is called the *colliery* (*vendita*). The confederation of all the huts of the province is called the *republic*, generally bearing the ancient name of the province; for instance, the *republic* of *West Lucania*, in *Principato Citra*, which consisted of 182 huts, and had its seat at Salerno; the *East Lucanian republic*, in the province of Basilicata, chief seat at Potenza; the *republics* of *Hirpinia, Daunia*, &c. The chief huts (*alta vendita*) at Naples and at Salerno endeavoured to effect a general union of the order, at least for the kingdom; but the attempt appears to have been unsuccessful. To what degree, however, the feelings of the nation were prepared for the object, appears from the fact, that the order, soon after its foundation, contained from 24,000 to 30,000 members, and increased so rapidly, that it spread through all Italy. In 1820, in the month of March alone, about 650,000 new members are said to have been admitted. Whole cities joined it; the little town Lanciano, in Abruzzo Citra, in March, 1814, contained 1200 armed members of the order. The terms of admission could not, of course, have been difficult; even notorious robbers became Carbonari; and the assertion, that their admission effected an immediate reformation of their life, will not meet with much credit. The clergy and the military, in particular, seem to have thronged for admission. The religious character of the order appears from its statues: "Every *carbonaro* has the natural and inalienable right to worship the Almighty according to his own opinions and the dictates of his conscience:" and this spirit shows most clearly the importance of the order; for it is far more difficult to be suppressed than the political spirit, and indicates a more universal and profound excitement. The Carbonari seem to have borrowed many forms from the freemasons, but did not, probably, originate from them. Even in Italy, freemasonry is considered distinct. Besides the Carbonari, several other secret societies have been formed—the *European Patriots;* the *Resolute (Decisi)*, at whose head was a famous robber, Giro Annichiarico (formerly a clergyman), who, in 1817, was taken prisoner and executed by general Church. With him his troop, consisting of a few members, was extinguished. (On the tendency and the constitution of the Carbonari, during the reign of Napoleon, see *Hermes*, xix.) After the suppression of the Neapolitan and Piedmontese revolution, in 1821, the Carbonari, throughout Italy, were declared guilty of high treason, and punished as such by the laws. Some interesting facts concerning them are contained in De Wit's Fragments from my Life and Time (Brunswick, 1827); but the book is such a mixture of presumption and exaggeration, that it is of little value to any reader who is not sufficiently acquainted with the political affairs of that time to distinguish the false from the true. The Carbonari have added one more to the attempts of Italy to realize a wish as old as its misfortunes; that is, to attain deliverance from a foreign yoke, and to become united under one government. There has not existed one Italian of talent, from Dante, who called his country *di dolor' ostello* (mansion of pain), down to the latest times, poet or politician, who has not lamented the divided state of his country, and subscribed the sentiment of Petrarca, *Italia mia, benchè sia indarno*, &c.

CARBONIC ACID. See *Carbon*.

CARBONIC OXYDE. See *Carbon*.

CARBUNCLE. See *Garnet*.

CARBUNCLE, in surgery; a roundish, hard, livid and painful tumour, quickly tending to mortification, and (when it is malignant) connected with extreme debility of the constitution. When this complaint is symptomatic of the plague, a pestilential bubo usually attends it. (See *Plague*.) The carbuncle is seated deeply, in parts provided with cellular membrane, and therefore does not soon discover its whole dimensions, nor the ill digested matter it contains.

CARCASS (in French, *carcasse*), in military language; an iron case filled with combustible materials, which is discharged from a mortar, like a bomb. There were formerly two kinds, oblong and round ones, but they are now out of use.—In architecture, *carcass* signifies the timber-work of a house, before it is either lathed or plastered.

CARCINOMA. See *Cancer*.

CARD. Playing-cards are, probably, an invention of the East, as appears from the name which cards originally bore in Italy (*naibi*), and still bear in Spain and Portugal (*naipes*), which word, in the Oriental languages, signifies *divination* or *prognostication*. If it could be proved that the Gipsies first made cards known in Asia and Africa, this supposition would be placed beyond doubt. It is asserted, that the Arabs or Saracens learned the use of cards from the Gipsies, and spread the use of them in Europe. The course that card-playing took, in its diffusion through Europe, shows that it must have come from the East, for it was found in the eastern and southern countries before it was in the western. The historical traces of the use of cards are found earliest in Italy, then in Germany, France, and Spain. The first cards were painted, and the Italian cards of 1299 are acknowledged to have been so. The art of printing cards was discovered by the Germans, between 1350 and 1360. The Germans have, moreover, made many changes in cards, both in the figures and the names. The *lanzknechtsspiel*, which is regarded as the first German game with cards, is a German invention. Of this game we find an imitation in France, in 1392, under the name of *lansquenet*, which continued to be played there till the time of Moliere and Regnard, and, perhaps, still longer. The first certain trace of card-playing in France occurs in the year 1361, and Charles VI. is said to have amused himself with it during his sickness, at the end of the 14th century. The modern French figures are said to have been invented in France between 1430 and 1461. It has been said that cards were known in Spain as early as 1332, but this opinion is supported by no evidence. The earliest indication of card-playing in Spain is its prohibition by the king of Castile, John I., in 1387, when it must, consequently, have been very prevalent. One of the best works on the different games at cards is the well-known treatise of Hoyle. (For the different games, see the respective articles.)

CARDAMOM, small (*cardamomum minus; amomum cardamomum*, Linnæus); a perennial plant growing in the East Indies. The fruit is used as a stimulant and excitant. Triangular capsules, from four to five lines in length, of a yellowish-white, contain the seeds, which are of a brown colour, a pleasant, aromatic smell, a warm, pepper-like taste, weaker, however, than that of the various peppers. In France, it is much less used than in Britain and the United States.—The *great* and *middle cardamoms* are furnished by other species of *amomum*, as yet unobserved and undescribed. They may be only varieties of the preceding. Their properties are not so energetic.

CARDAN, or CARDANO, Geronimo (*Hieronymus Cardanus*). This famous philosopher, physician, and mathematician, was born in 1501, at Pavia, and was educated, from his fourth year, very carefully in the house of his father, a physician and lawyer in Milan, distinguished for his learning and integrity. In his twentieth year, he went to Pavia to complete his studies; and, after two years, he began to explain Euclid. He was, subsequently, professor of mathematics and medicine in Milan. He then returned to Pavia, again visited Milan, taught, for some time, at Bologna, and, meeting with some difficulties there, went to Rome. Here he was received into the medical college, and was allowed a pension by the pope. He declined the invitations of the king of Denmark, on account of the climate and of the religion of that country. The latter reason for his refusal appears strange from a man who was accused of irreligion; but his biographers differ with regard to his religious opinions. Contradictory passages are cited from his works, which cannot surprise us in one who was lost in cabalistic dreams and paradoxes, and pretended to have a familiar demon (*dæmon familiaris*), from whom he received warnings, &c. All this excited the theologians against him, who attacked his orthodoxy, and even accused him of atheism, but certainly without foundation. The truth is, that Cardan was superstitious, but his chimeras were in opposition to the reigning superstitions of the age. He believed so implicitly in astrology, that he drew his own horoscope several times, and ascribed the falsehood of his predictions, not to the uncertainty of the art, but to his own ignorance. His two works, *De Subtilitate* and *De Rerum Varietate*, contain the whole of his natural philosophy and metaphysics, and are curious as an instance of a strange mixture of wisdom and folly. Cardan wrote, also, on medicine. His writings on this subject, amid much trash, contain some sound ideas. His fame as a physician was so great, that the primate of Scotland, who had been sick for ten years, and had consulted the physicians of the king of France, and of the emperor of Germany, without success, invited him to Scotland, and was restored to health by his prescriptions. His highest claims to the gratitude of the learned rest on his mathematical discoveries. Algebra, which, from the time of its origin, had been cultivated almost exclusively in Italy, excited, at that time, much rivalry among the mathematicians, who carefully kept their discoveries secret, in order to triumph over each other in their public disputes. Cardan, it is said, was told that Tartalea had discovered the solution of equations of the third degree, and obtained the secret from him by stratagem and under promise of silence, but published the method, in 1545, in his *Ars magna*. A violent dispute arose, which cannot now be decided with certainty. The honour of giving his name to the invention has remained to him who first made it known, and it is still called the *formula of Cardan*. It is universally believed that Cardan discovered some new cases, which were not comprehended in the rule of Tartalea; that he discovered the multiplicity of the roots of the higher equations, and, finally, the existence of negative roots, the use of which he did not, however, understand. His tranquillity was disturbed, not only by the attacks of his enemies, but also by his own extravagances, which are related in his work *De Vita propria*, no doubt with much exaggeration. They are exposed with so much frankness, that those who have judged him with indulgence have been obliged to suppose him subject to fits of insanity. He died, probably, in 1576, according to some accounts, by voluntary starvation, that he might not survive the year in which he had predicted that his death would occur. All his works

to the number of more than fifty, are contained in the edition of Lyons, 1663, in ten vols., folio.

CARDIFF, or CAERDIFF, a town in Glamorganshire, South Wales, situated upon the banks of the river Taff. It is irregularly built, is a busy trading-place, and the capital of the county. Caerdiff, meaning the *fortress on the Taff*, is said to owe its origin to Jestyn ap Gwrgan, who built the town out of the ruins of the adjacent Roman station at Roath, in the year 1080. Robert Fitzhamon, a kinsman of William the conqueror, first resided here in the year 1091, and is supposed to have erected the castle in the year 1110. In a dungeon, near the entrance to this strong-hold, Robert, duke of Normandy, was confined by his brother, Henry I., for twenty-six years, having been previously deprived of his sight by that unnatural usurper. During Cromwell's wars, Cardiff castle was bombarded for three successive days, and only yielded at last from the treachery of a deserter. Population in 1831, 6187.

CARDIGAN, a maritime county of Wales. The surface of the northern and eastern parts is mountainous, but interspersed with fertile valleys; while the southern and western districts are more level, and produce abundance of corn. The soil in the vales is chiefly peat, capable of growing either grain or grass, by the application of lime: the higher grounds consist of a light sandy loam, and the mountains are composed chiefly of clay-slate. The agricultural produce of this county is comparatively small; black-cattle, sheep, and wool, are the staple commodities; but corn is sometimes procured by importation from other counties. Few counties of England or Wales are richer in mineral treasures, and few or none also derive so little benefit from the possession. Silver, lead, and copper, have been found here for centuries back. Sir Hugh Middleton acquired the fortune which he expended in conducting the new river to London, in the silver and lead mines of Cwmsymlog; but this, as well as thirty-five mines of copper, lead, and silver, all contained in the hills of this county, and worked successively at various times, is now totally abandoned. Perhaps the want of coal in the vicinity, may be the occasion of the discontinuance of some works, as it renders the produce of others necessary to be exported to the smelting-furnaces of Swansea and of Bristol. The principal towns are, the borough and county-town of Cardigan, Lampeter, Aberystwith, Tregarron, and part of Newcastle-in-Emlyn. There are no manufactories conducted here. Population of the county in 1831, 64,780; of the borough and parish, 2795.

CARDINAL; a clergyman of the Catholic church, who has a right to a vote in the choice of the pope. The cardinals are next in dignity to the pope, enjoy the rank of princes, and, since 1631, have borne the title of *eminence*. The origin of the dignity of cardinals is uncertain. The name is derived from *cardinalis* (distinguished). The same name was given, under the emperor Theodosius, to the highest civil officers in the state. Till the eleventh century, the title of *cardinal* was common to all clergymen who actually officiated in any church. From this time the popes, having grown powerful, formed a college, a secret council of ecclesiastics of high rank, to whom, alone, the title of *cardinal* was soon reserved, by way of eminence; and, under Alexander III., in 1160, they obtained the exclusive right of choosing the pope, with much opposition, however, on the part of the other Roman clergy, and much scandal. Innocent IV. (1243—1254) gave them a rank above the bishops, together with the red hat, and Boniface VIII. assigned to them the princely mantle. Urban VIII. gave them the title *eminence*, instead of *lustrissimi*, which they had enjoyed till then. With the pope, they form the sacred college, and are divided into three ranks—fourteen cardinal-deacons, fifty cardinal-priests, and six cardinal-bishops, who take their names from the ancient bishoprics, Ostia (to which is added that of St Rufin), Porto, Sabina, Palestrina, Frascati, and Alba. In 1526, their number was fixed at seventy by Sixtus V.; but it is by no means necessary that this number should be always full, and, in modern times, it has generally not been so. The number of bishops only is always complete. The choice of the cardinals depends solely on the pope. He causes the names of those appointed to be read in the consistory, with the formula *"Fratres habebitis"* (Ye shall receive as brethren, &c.). The red cardinal's hat is sent to those elected, to inform them of their election. Their dress consists of a surplice, with a short purple mantle, and a small cap, over which they wear a hat, with silk strings and tassels at the end. The colour is either red or violet. The prerogatives of cardinals, in different countries, are different. (For those which they enjoy in France, see the article *Cardinal* in the *Dictionnaire de Theologie*, Toulouse, 1817). The king of France gives a cardinal the title of *cousin*. A cardinal, sent to a prince in a diplomatic character from the pope, is called *legatus a latere* or *de latere*. A province, the governor of which is a cardinal, takes the title of a *legation*. The income of the cardinals is, at present, not large, and, compared to that of some of the rich clergy in England, is small. The importance and authority of the cardinals has, of course, sunk very much in modern times, like those of the other dignitaries of the Catholic church, the pope himself included. Formerly, they preceded the princes of the blood, sat at the right of kings, on, or near the throne, and were considered equal to kings in rank. For the manner in which they choose the pope, see *Conclave*.

CARDINAL POINTS; the four intersections of the horizon with the meridian and the prime vertical circle. They coincide with the four cardinal regions of the heavens, and are, of course, 90° distant from each other. The intermediate points are called *collateral points*.

CARDINAL VIRTUES, or *principal virtues*, in morals; a name applied to those virtues to which all the rest are subordinate, or which comprehend all the others. The distribution of the virtues, which lies at the foundation of this notion, had its origin in the old Grecian philosophy; and the same number is found here as in the elements of nature. These principal virtues, as enumerated by Plato, are, prudence, temperance, fortitude, and justice. The three first seem to relate to the duties of man towards himself, and to correspond with the triple division of the soul into the intellectual, the irrational (the seat of the sensual desires), and the seat of the affections, which connects the two first. Justice either relates to our duties to others (God and men), or is the union of the three first virtues. This division appears to be peculiar to the old Pythagoreans. Aristotle divided them still further. The Stoics, too, made the same division in their system of morals, and Cicero introduced it into his Offices. Plotinus and many New-Platonists divide the virtues into four classes—civil or political, philosophical or purifying, religious, and, lastly, divine or pattern virtues: a division coinciding with the rest of his philosophical views. The influence of the ancient philosophers has made the preceding cardinal virtues also a part of the Christian code. Some add to them the three *Christian virtues*, so called—faith, charity, and hope—and call the former *philosophical*. The imagination of artists has represented the cardinal virtues under sensible images. In modern times, this divi-

sion is regarded as useless in treating of ethics, and, in order to judge of it correctly, we must form a just notion of the idea which the ancients attached to the words ἀρετὴ and *virtus* (virtue).

CARDING; a preparation of wool, cotton, hair, or flax, by passing it between the iron points, or teeth, of two instruments, called *cards*, to comb, disentangle, and arrange the hairs or fibres thereof for spinning, &c. Before the wool is carded, it is smeared with oil, whereof one-fourth of the weight of the wool is required for wool destined for the woof of stuffs, and one-eighth for that of the warp.

CARDROSS; a parish in Dumbartonshire, beautifully situated on the northern bank of the Clyde, and watered on the east by the Leven. It is seven miles in length and from three to four in breadth; and the ground rises with a gradual ascent from the shore for upwards of two miles, until it terminates in a ridge of hills, which separates it from land in the vicinity of the Leven and Loch Lomond. Very extensive print-fields, which employ several hundred persons, are situated at Dalquhun and Cordale. In the old mansion-house of the former was born Dr Smollett, to whose memory a pillar has been erected. Upon an eminence, a little west of the Leven, stood a castle, of which no vestige now remains, in which king Robert Bruce breathed his last. Population in 1831, 3596.

CAREENING (in French, *faire àbattre, carèner*); heaving the vessel down on one side, by applying a strong purchase to the masts, so that the vessel may be cleansed from any filth which adheres to it by breaming.—A *half careen* takes place when it is not possible to come at the bottom of the ship; so that only half of it can be careened.

CAREW, Thomas, an English poet, supposed to have been born in 1589, was educated at Corpus Christi college, Oxford. Cultivating polite literature in the midst of a life of affluence and gayety, he was the subject of much eulogy to Ben Jonson, Davenant, and other writers of the period. He seems to have died in 1639, having, in the mean time, exhibited the not unusual transformation of the courtly and libertine fine gentleman into the repentant devotee. Carew is coupled with Waller, as one of the improvers of English versification. It does not appear that any edition of his poems was published during his life-time; but Oldys, in his notes on Langbaine, asserts that his sonnets were in more request than those of any poet of his time. The first collection of his poems was printed in 1640, 12mo; the last, in 1772. His elegant masque of *Cœlum Britannicum* was printed, both in the early editions and separately, in 1651, and the whole are now included in Chalmers' British Poets. Carew was much studied by Pope; and doctor Percy also assisted to restore him to a portion of the favour with which he has lately been regarded. Specimens both of the sublime and the pathetic may be found in his works; the former in his admirable masque, and the latter in his epitaph on lady Mary Villiers.

CARGILLITES; a name of the sect more generally known under the denomination of *Cameronians* (q. v.).

CARIACO; a seaport town in Colombia, in the province of Cumaná; lon. 63° 39′ W.; lat. 10° 30′ N.; population, 6500. It is situated to the east of the gulf of Cariaco, near the mouth of a river of the same name, on a large plain, covered with plantations. The climate is very hot, the air damp and unhealthy. Its trade is in cotton and sugar. The gulf of Cariaco is sixty-eight miles long, and thirty-five broad, from eighty to a hundred fathoms deep, surrounded by lofty mountains, and the waters quiet.

CARIATIDES. See *Caryatides*.

CARIBBEAN SEA; that part of the Atlantic ocean, which is bounded N. by the islands of Jamaica, St Domingo, Porto Rico, and the Virgin islands, E. by the Caribbean islands, S. by Colombia, and W. by Guatimala.

CARIBBEE ISLANDS; the *West India islands*, so called, which lie in a line from Anguilla N. to Tobago S., and form the eastern boundary of the sea called *Caribbean sea*. The name has been loosely applied to the whole of the West India islands, but is more particularly understood of that archipelago which lies between the 58th and 63d° W. lon., and the 11th and 19th° N. lat. The principal are St Christopher's, Guadaloupe, Antigua, Montserrat, Mariegalante, called *Leeward islands* (q. v.); Dominica, Martinico, St Lucia, St Vincent's, called *Windward islands* (q. v.); Grenada, Tobago, Barbadoes, &c.

CARIBBEE or ST LUCIA BARK. Under the general denomination of *cinchona*, several barks have been comprehended which are not the products of the real cinchona (q. v.), and which, in fact, neither contain cinchonia nor quinia, and cannot, consequently, be substituted as a febrifuge for the true species of cinchona. One of the principal substitutes of this kind is the Caribbee or St Lucia bark, which is procured from the *exostema Caribæa* (Persoon), a tree growing in the West Indies. This bark is in convex fragments, covered with a yellow epidermis, commonly thin, but sometimes hard and spongy, with deep fissures, of a yellow, red, or brown tint internally, of a fibrous texture, offering here and there small, shining, and crystalline points, of a very bitter taste, and very faint smell.

CARIBBEES; the original inhabitants of the Caribbee islands (q. v.), who, in consequence of domestic broils, emigrated from North America, in the neighbourhood of Florida, to these islands, and to Guiana, in South America, where they live independent, and have been joined by many runaway Negroes. They often engage in wars against the European colonists. They were almost entirely expelled from the islands in the eighteenth century. On St Vincent, there are only a hundred, and on Dominica, only thirty families of red Caribbees. They are of an olive-brown colour, but they paint themselves with arnotto, as a defence against insects. On the island of St Vincent, there are black Caribbees, sprung from the intercourse of black slaves and Caribbean women. Their number amounts to 2000 families. They are of a dark-brown colour, and, notwithstanding all the efforts of the British, they maintain the independence of their quarter of the island. The red Caribbees are distinguished for their activity and courage. They inhabit villages, governed by an elective chief, whom the Europeans call *captain*. They assemble for battle at the sound of a conch. Next to the Patagonians, they are perhaps the most robust nation with which we are acquainted. They devour the flesh of their enemies with great voracity. Their language, one of the most sonorous, and one of the softest in the world, contains nearly thirty dialects.

CARICATURE (from the Italian *caricare*, to load, to overcharge; *charger*, with the French). A caricature is therefore an exaggerated representation of the qualities and peculiarities of an object; but in such a way that the likeness is preserved, or even made more striking. The effect of such a representation need not be always ridiculous; it may also be terrible. Ben David says, "A child of the usual size, with the head and arms of a giant, is a horrid caricature, whilst a large man, with a diminutive nose, with a little mouth, and a small voice, is a ridiculous one." Considered in reference to the fine

arts, external deformities, which do not spring from the fault of the persons afflicted, and therefore excite compassion rather than disgust, can never be the proper subjects of caricature; for, besides that the moral sense is offended, the arts are not permitted to idealize deformities, unless for the purpose of imbodying and representing character. Such corporeal disfigurements, however, as arise from moral defects, and all disagreeable peculiarities of manner and appearance which spring from the same cause, are fair subjects of caricature. These caricatures are to be considered as poetical representations of moral and intellectual deformities, of the vices and follies of individuals, or of whole classes, sects, &c., as dramatic pictures, which acquire interest from the moral views with which they are composed by the painter, and understood by the spectator. With this object, Leonardi da Vinci has drawn his caricatures. He represents the quarrelsome, the peevish, the braggart, the slothful, the bloated glutton, the dissipated rake, the awkward clown, the laughing fool, &c., all with fidelity, but with exaggeration. Caricatures may be tragic or comic. To the former belong illustrations of moral depravity; to the latter, those of intellectual deficiencies arising from self-neglect. They were in use even among the ancients, who had among their masks a number of caricatures. Hogarth is an unrivalled master of caricature. Leonardi da Vinci, Annibale Caracci, Ghezzi, Callot, and Ramberg, were also distinguished in this branch of art. The political caricatures of the English are of a striking and peculiar kind, often exhibiting a greater sensibility for political liberty than for dignity and beauty, but abounding in wit and bold humour. Gilray and Bunbury may be considered as the chief masters in this kind of caricature. The French caricatures are rather exaggerated representations of life than satirical ideals. The Italians have too strong a sense for the beautiful to relish caricatures, and the Germans are too grave to excel in these sportive productions. Grose, in London (1788), published rules for the drawing of caricatures, with an essay on comic painting; and Malcolm, an Historical Sketch of the Art of Caricaturing, with Graphic Illustrations, London, 1813, 4to. An ingenious method of obtaining caricature likenesses is to draw the likeness on leather, and then to stretch the leather, so that the features may be exaggerated while the resemblance remains.

CARILLONS. See *Chimes*.

CARINTHIA; a duchy of the Austrian monarchy. See *Austria*.

CARISSIMI, Giacomo; a famous Italian musical composer of the seventeenth century. He was born at Padua, and was living as late as 1672. He wrote many oratorios, cantatas, and motets, and his contemporaries praised him for his characteristic expression of feeling, and his easy, flowing style. He deserves most honour for the improvement of the recitative, having given it a more expressive and natural language. He wrote, also, it is said, the first church cantatas.

CARITA (Italian, from the Latin *caritas*); a name, in the fine arts, applied to the representation of Christian love. It is exhibited under the figure of a tender mother, in the midst of her children, manifesting her kindness and affection for them. In this way, for instance, Andrea del Sarto has represented it in a picture which was formerly in the Napoleon museum. A careful and tender mother, holding two children, of whom one lies upon her breast, and the other is refreshing itself with sweet fruits, while a third, on whom her eyes are fixed, slumbers softly near her, are the prominent parts of the picture. This representation of loveliness and tenderness united was unknown to ancient art.

CARLETON, Sir Guy, lord Dorchester, was born at Strabane, in Ireland, in 1724, and, entering the army, became lieutenant-colonel in the guards in 1748. In 1758, he accompanied general Amherst to America, where he distinguished himself at the siege of Quebec. He was promoted to the rank of colonel in the army in 1762, and, at the siege of the Havannah, signalized himself by his bravery. In 1772, he was appointed governor of Quebec, and created major-general. By his great exertions, he saved the whole of Canada, the capital of which was besieged by the American generals Montgomery and Arnold. The inhabitants joined the British troops, and, after an obstinate resistance, the Americans were repulsed, and Montgomery was killed at the head of his army. In consequence of this exploit, he was knighted, and, the next year, became a lieutenant-general. In 1781, he was appointed to succeed Sir Henry Clinton, as commander-in-chief in America, where he remained until the conclusion of the war. In 1786, he was again created governor of Quebec, Nova Scotia, and New Brunswick; and, as a reward for his long services, was raised to the peerage, by the title of *lord Dorchester*, of Dorchester, in the county of Oxford. He died in 1808, aged eighty-five.

CARLI (Giovanni Rinaldo), count, called sometimes *Carli-Rubbi*, from the title of his wife, was born in 1720, at Capo d'Istria, of an ancient noble family, and early manifested an inclination for the study of the middle ages, with which he connected the study of belles-lettres and of poetry. In his twenty-first year, the senate of Venice made him professor of astronomy and naval science. On account of a ridiculous controversy between him and the abbé Tartarotti, on witches and witchcraft, he was accused of heresy. Maffei put an end to the controversy by his *La Magia Annihilata*. The care which his large estates required compelled Carli to resign his professorship and retire to Istria, where he spent his time in the study of antiquities, on which he has written some valuable treatises. He was afterwards appointed by the emperor president of the highest commercial court at Milan, and, subsequently, president of the college of finance in the same city. He published his works, 1784—1794, complete in fifteen volumes, under the title *Opere del Sig. Commendatore D. Gian. Rinaldo, Conte Carli, Presidente, &c.*: but, in this edition, his American letters are not contained, which form a work of five volumes. He died in 1795.

CARLIN; the most celebrated harlequin of the French stage. Some writers consider the word *harlequin* as derived from his name. He was born at Turin in 1713. His true name was Carlo Antonio Bertinazzi, and *Carlin* is the abbreviation of *Carlino*, the Italian diminutive of *Carlo*. In 1741, he went to Paris, took part in the Italian comedy there, and performed, for forty-two years, in the character of harlequin, with constant applause. Goldoni praises him not only as one of the best comic actors, but also for his excellent manners and elegant appearance in society. He enjoyed the greatest favour with the *parterre*, and addressed the audience with a familiarity not allowed to any other actor. He was still more successful in improvisation than in the performance of written parts, and has performed a whole piece of five acts (*Les vingts-six Infortunes d' Arlequin*) in this manner. The union of mirth and benevolence, the grace of his figure and manners, and the respectability of his private character, made him so beloved, that it was said of him,—

Dans ses gestes, ses tons, c'est la nature même,
Sous la masque on l'admire, à découvert on l'aime.

Many bon-mots and witty sayings by him were long

current in Paris. The melancholy temper of his latter years formed a remarkable contrast with his mirth on the stage. He was the author of a piece in five acts, *Les nouvelles Métamorphoses d'Arlequin*, 1763.

CARLISLE; a city of England, and capital of Cumberland, situated 301 miles N. N. W. from London, and 96 S. from Edinburgh. It occupies a gentle eminence at the confluence of the Eden and the Calder, a short distance S. E. of the point where the great Roman wall crossed the former river. It was called by the Romans and Britons Luguvallum, contracted by the Saxon to *Luel*, and added to the word *Caer*, city; whence, by easy corruption, the modern name of Carlisle, signifying the city near the wall. Being a frontier-town, it was strongly fortified with walls, citadel, and a castle, under both Saxons and Normans. The former are said to have been first built by Egfrid, king of Northumberland, in the seventh century. They had three gates, named English, Irish, and Scottish gates, and enclosed a triangular site. The west wall was 1000 yards in length, the eastern wall 460 yards, and the northern wall 650 yards. In the various improvements of the city, all these walls, gates, and fortifications, have been removed, except a portion of the west wall, and the castle, which was erected by William Rufus, on the corner of a bold eminence overlooking the river Eden. The latter is still kept in repair, and maintained as a garrison, with a governor, lieutenant-governor, store-keeper, and other stationary officers. Carlisle is highly celebrated in border history and in the wars between England and Scotland. It was destroyed by the Danes in 875; from which time it lay in a state of desolation until fortified and improved by William Rufus. David, king of Scotland, died here in 1153, after his retreat from the fatal battle of the Standard, and, in 1216, it was taken by Alexander, king of Scotland. It was subsequently repeatedly besieged by the Scots, but could not be taken again, until 1645, when a party of the Scottish army on the side of Parliament starved it into a surrender. It was, in 1648, surprised and captured by Sir Philip Musgrave, a royalist, but ultimately yielded to the skill and fortune of Cromwell. In 1745 it made little more than a nominal resistance to the Scottish army, under Charles Edward, to whom the mayor and aldermen delivered the keys of the city on their knees. The officers of the garrison, on this occasion, were most of them afterwards executed for high treason. Carlisle has received the peaceable as well as warlike visits of many English and Scottish sovereigns; among whom was Mary Queen of Scots, whose English imprisonment commenced here. The port of Carlisle extends from the Sark, which divides Cumberland from Scotland, to Bank End near Marypool. Large vessels cannot discharge their cargoes nearer than Fisher's Cross, a distance of twelve miles; but the ship-canal, completed in 1823, and extending from Carlisle to Solway Firth, affords a communication with the western ocean for vessels of from sixty to eighty tons, and is likely in the sequel to contribute greatly to the wealth and prosperity of the city. The trade is chiefly of a coasting description, the foreign commerce being confined to Whitehaven. Here is a custom-house. The principal manufactures in Carlisle are cotton-yarn, cotton and linen checks, grey cottons, osnaburgs, coarse linen, drills, pocketing, worsted shag, silk and cotton fancy pieces, stamped cottons, hats, chamois and tanned leather, linseys, nails, coarse knives, stockings, dressed flax, soap, candles, nankeens, and ropes. Population in 1831, 20,006.

CARLISLE; a post-town and capital of Cumberland county, Pennsylvania, 114 miles W. Philadelphia. Population in 1820, 2908. Dickinson college was founded in this town, in 1783, and continued a respectable and flourishing institution till about 1816, when its operations were suspended. It has been reorganized, and its operations were resumed in January, 1822. The principal officers are a president and three professors. There is a grammar-school connected with the college.—In the United States and in Canada there are several other places called *Carlisle*.

CARLOS, Don; infante of Spain; son of Philip II. and Maria of Portugal; born at Valladolid, 1545. His mother died four days after his birth. He himself was sickly; and one of his legs was shorter than the other. The extreme indulgence with which he was educated by Joan, sister of the king, confirmed his violent, obstinate, and vindictive disposition. In 1560 Philip caused him to be acknowledged heir of the throne by the estates assembled at Toledo, and, in 1562, he sent him to the university of Alcala de Henarez, in hopes that the study of the sciences would soften his turbulent character. An unlucky fall threw him into a burning fever, and the physicians lost all hopes of his recovery. The king immediately hastened to his son, and, as it was recollected that the prince had a very great veneration for St Didacius, who was not yet canonized, Philip commanded the corpse of the saint to be brought in a procession. It was laid upon the bed of the sick prince, and his hot face covered with the cold shroud. He fell asleep: when he awoke the fever had left him: he demanded food, and recovered. All believed a miracle had been wrought, and Philip requested the canonization of Didacius. Contemporary historians differ in the description of the prince. According to some, he had a thirst for glory, an elevated courage, pride, and a love of power. According to others, he was fond of whatever was strange and uncommon; an accident or opposition irritated him to frenzy; address and submission softened him. He is also represented as a favourer of the insurgents in the Netherlands, and, in particular, as an enemy of the inquisition; yet he possessed neither knowledge nor principles, nor even sufficient understanding to be capable of liberal views. With him all was passionate excitement, which resistance converted into fury. Llorente has corrected the accounts of the character and fate of this prince, from authentic sources, in his work on the Spanish Inquisition (q.v.). According to him, don Carlos was arrogant, brutal, ignorant, and ill-educated. Thus much is certain, that, at the congress of chateau Cambresis (1559), the marriage of don Carlos with Elizabeth, daughter of Henry II. of France, was proposed; but Philip, being left a widower by the death of Mary of England, took the place of his son. Don Carlos is said to have loved Elizabeth, and to have never forgiven his father for having deprived him of her. Llorente proves, however, that don Carlos never had fallen in love with the queen, and that she was never too intimate with him. In 1563, Philip, who had no other heir than don Carlos, considering him unfit for the throne, sent for his nephews, the archdukes Rodolph and Ernestus, to secure to them the succession to his dominions. Don Carlos, who lived in continual misunderstanding with his father, resolved, in 1565, to leave Spain, and was on the point of embarking, when Ruy Gomez de Silva, a confidant both of Philip and Carlos, dissuaded him from his resolution. In 1567, when the rebellion in the Low Countries disquieted Philip, don Carlos wrote to several grandees of the kingdom, that he had the intention of going to Germany. He disclosed his plan to his uncle, don Juan of Austria, who mildly dissuaded him from it, and represented to him, that most of the grandees to

whom he had written would not omit to inform the king. This was, in fact, done; and, indeed, don Juan himself told Philip what don Carlos had confided to him. It is believed that he was touched by the sufferings of the people of the Netherlands; that he had been invited by them to place himself at their head, and that this plan, from its bold and extravagant character, had gained his approbation. Philip himself seemed to believe that his son intended to go to the Netherlands. The baron Montigny lost his head on this account. The infante had often shown a vehement desire to participate in the government. But Philip, jealous of his own authority, treated his son coolly and with reserve, whilst he gave his confidence to the duke of Alva, to Ruy Gomez de Silva, don Juan of Austria, and Spinola. Don Carlos conceived an invincible aversion to them. He could not bear that Alva should have received the government of Flanders, which he had requested for himself. The architect of the Escurial, Louis de Foix, gives the following facts relating to don Carlos, which have been preserved to us by De Thou. The prince had always under his pillow two naked swords, two loaded pistols, and, at the side of his bed, several guns, and a chest full of other fire-arms. He was often heard to complain, that his father had deprived him of his bride. On Christmas evening, he confessed to a priest that he had resolved to murder a man. The priest, therefore, refused him absolution. The prior of the monastery of Atocha artfully drew from him expressions, from which it could be inferred that he meditated an attempt upon his own father. The confession was then communicated to the king, who exclaimed, "I am the man whom my son intends to murder; but I shall take measures to prevent it." Thus Philip, a jealous husband, a gloomy and suspicious king, and an unfortunate father, impelled by hatred or fear, by policy or superstition, resolved on the destruction of his only son, in whom he saw only a criminal, unworthy of the crown. On the night of Jan. 18, 1568, while don Carlos was buried in a deep sleep, count Lerma entered his chamber, and removed his arms. Then appeared the king, preceded by Ruy Gomez of Silva, the duke of Feria, the grand prior of the order of St John, brother of the duke of Alva, and several officers of the guard, and state councillors. Don Carlos still slept. They awaked him: he beheld the king, his father, and exclaimed, "I am a dead man." Then, addressing Philip, he said, "Does your majesty wish to kill me? I am not mad, but reduced to despair by my sufferings." He conjured, with tears, those who were present to put him to death. "I am not come," answered the king, "to put you to death, but to punish you as a father, and to bring you back to your duty." He then commanded him to rise, deprived him of his domestics, ordered a box of papers under his bed to be seized, and committed him to the care of the duke of Feria and six noblemen, enjoining them not to permit him to write, nor to speak with any one. These guards clothed don Carlos in a mourning dress, took from his chamber the tapestry, the furniture, and even his bed, leaving him nothing but a mattress. Don Carlos, full of rage and despair, caused a large fire to be kindled, under pretext of the extreme cold of the winter, and threw himself suddenly into the flames, for the purpose of suffocating himself. It was with difficulty that he was rescued. He attempted, by turns, to finish his life by thirst, by hunger, by eating to excess; he also attempted to choke himself by swallowing a diamond. After Philip had endeavoured to justify his measures to the pope, and the principal sovereigns of Europe, and had also given notice to the superior clergy, to the courts of justice, and to the cities of his empire, of what had passed, he referred the case of the prince, not to the inquisition, but to the council of state, under the direction of cardinal Espinosa, who was state councillor, grand inquisitor, and president of the junta of Castile. This court is said, after a minute examination, and hearing many witnesses, to have condemned him to death. But it is a mistake to suppose that the sentence was executed by means of a poisoned soup, or that his arteries were opened in a bath, or that he was strangled. Ferreras and other Spanish historians report, that he died of a malignant fever, after having taken the sacrament with much devotion, and having asked his father's pardon. According to Llorente, the king signed, March 2, the judicial order for the formal arrest of the prince, for whom the pope, and all the princes to whom Philip had written, in particular the emperor Maximilian II., had interposed in vain. The execution of the order of imprisonment was committed, by Philip, to Ruy Gomez de Silva, prince of Evoli. The prince displayed all the violence of his passionate disposition. He obstinately refused to confess, lived irregularly, and his fury inflamed his blood to such a degree, that even ice-water, which he used daily, could not refresh him. He ordered a great quantity of ice to be laid round his bed, went naked and barefoot upon the stone floor, and, for eleven days in June, took no food but ice. The king then visited him, and addressed to him some words of consolation; after which, the prince eat to great excess. This brought on a malignant fever. Meanwhile, don Diego Bribiesca de Mugnatones, member of the council of Castile, conducted the trial. The prince had not the slightest official notice of it. In July, Mugnatones drew up a report to the king, from the testimony of the witnesses, and from the papers of the prince, which had been seized, stating that don Carlos was guilty of treason, in having plotted against the life of his father, and in having attempted to make himself master of the government of Flanders by a civil war; but that it must depend on the king whether he would have the infante judged according to the common laws of the kingdom. Philip declared that, as king, his conscience did not permit him to make any exception from the laws in favour of a prince who had shown himself so unworthy of the throne. He believed that the recovery of the prince's health was not to be expected; and that, therefore, he ought to be permitted to take food without any restraint, which would cause his death; that he ought, however, to be convinced that his death was inevitable, in order to induce him to confess, and secure his eternal welfare. The judicial records make no mention of this resolution of the king; no judgment was written or signed; and the secretary Pedro del Hoyo observes, in a note, "that the judicial process had proceeded thus far, when the prince was carried off by sickness, and that, therefore, no judgment was rendered." With this the written accounts of other persons, who were employed in the palace of the king, agree. In consequence of the declaration of the king, the cardinal Espinosa and the prince of Evoli thought it advisable to leave the death of the prince to the progress of the disease. To the physician of the king, Olivarez, who had the care of the prince, this purpose of the prince of Evoli was communicated. On the 28th of July, he administered a medicine to the patient, after which the disease appeared to become fatal, and advised the infante to prepare himself for his approaching death by taking the sacrament. This don Carlos did, July 21, and asked pardon of the king, his father, through his confessor. Philip granted it, and also his blessing. Upon this, don Carlos received the sacrament, and made his will.

The struggle lasted during the 22d and 23d of July. The prince listened, during that time, with calmness, to the prayers of the clergyman. On the night of the 23d, the king visited him, gave him his blessing, without being recognized by the prince, and withdrew weeping. Soon afterwards, at four o'clock in the morning of the 24th of July, 1568, don Carlos expired. He was buried, as became his rank, yet without any funeral sermon, in the convent of the Dominican nuns, El Real, at Madrid.—The virtuous queen Elizabeth died, Oct. 23d, of the same year, in childbed, and not by poison, as the enemies of Philip asserted. Philip II., in 1592, ordered the judicial acts to be locked in a box, and to be deposited in the royal archives at Simancas. The melancholy fate of don Carlos has served as a subject for several tragedies—those of Schiller, Alfieri, Otway, and Campistron.

CARLOVITZA, or CARLOWITZ, or KARLOWITZ; a town of Austrian Sclavonia, on the Danube; seven miles S. E. Peterwardein; population, 5800. It is the see of a Greek archbishop. Here is a Greek gymnasium, which had, in 1817, 164 students. This town is remarkable for a peace concluded here, in 1699, between the emperor of Germany, Poland, Russia, Venice, and the Turks, by the mediation of England and Holland. By the terms of this peace, the emperor Leopold I. received Siebenburgen and Sclavonia; Poland received back Kaminiec, Podolia, and the Ukraine; Venice retained the conquered Morea; Russia, Azoph. See *Austria* and *Ottoman Empire*.

CARLOW; an inland county of Ireland, in the province of Leinster. From the remarkable fertility of its soil, it is altogether an agricultural county; butter being the staple, the quality of which is so superior, that it obtains the highest price in the British markets. The mineral productions are of the most useful character. Coal, limestone, iron ore, &c., exist in abundance, and granite pervades the mountain district. The trade of this county may be said to consist in carriage of corn, flour, coals, limestone, and butter, to Waterford, Wexford, and Dublin; with the last of which it has a canal communication. The county comprehended the ancient districts of Hy-drone, and Hy-Cavanagh, being the northern part of the principality of Hy-Kinselagh, and was erected into a county by king John, in 1210. The borough of Carlow is situated at the junction of the rivers Burrin and Barrow. It is a neat and thriving town.

CARLSBAD, in the kingdom of Bohemia, one of the most famous watering-places in the world, is situated in a deep, narrow valley of the river Tepel. It is said that Charles IV. discovered the warm springs here, in 1358, during a chase. Peter Baier, his physician, directed him to use them, to obtain relief for a disorder of his foot. The application proved most effectual; and, in consequence of this, the emperor is related to have built a castle here; and houses gradually accumulated round it. *Carlsbad* signifies, in German, *Charles' bath*. The town has 450 houses, with 2510 inhabitants. Ample provision has been made for the amusement of the visitors of this place. Fine buildings have been erected, and beautiful promenades laid out. A great number of strangers are attracted here every year. (See *Mineral Waters*). Carlsbad is also known on account of the

Congress of Carlsbad. This congress was only for Germany, and is to be considered as one of the many consequences of the increase of a liberal spirit in the German nation, and the unwillingness of the monarchs to keep their promises respecting liberal institutions. The final act of this congress was closed May 15, 1820, and made a law of the German confederation on July 2. The object of the congress, according to its own resolves, was, to decide upon measures for the safety and internal order of Germany. Laws were passed for the establishment of a stricter police in the universities, which, since that time, have been brought into closer contact with the governments, and officers have been appointed to watch over the conduct of the students. Periodical works, and such as contain less than twenty sheets, were put, for five years, under a severe censorship; and the diet was to have the right to suppress any books which disturbed the peace or attacked the dignity of any member of the confederation, or tended so to do. For the detection and prosecution of secret political societies throughout Germany, and the checking of *"demagogic* tendencies," a central police-commission was organized. The congress, moreover, complained of dangerous theories every day becoming more and more widely spread, &c.

CARLSCRONA, or CARLSCROON; a sea-port of Sweden, capital of the province of Blekingen, or Carlscrona; lon. 15° 33′ E.; lat. 56° 17′ N.: population in 1810, 10,639; in 1815, 11,860. The greatest part stands upon a small, rocky island, which rises gently in a bay of the Baltic. The suburbs extend over another small rock, and along the mole close to the basin, where the fleet is moored. It is adorned with one or two handsome churches, and a few tolerable houses of brick; but the buildings in general are of wood. The suburbs are fortified, towards the land, by a stone wall. The entrance into the harbour, which, by nature, is extremely difficult, from a number of shoals and rocky islands, is still further secured from the attack of an enemy's fleet by two strong forts, built on two islands, under the batteries of which all vessels must pass. The harbour is large and commodious, with depth of water sufficient for ships of the first rate. The exports are timber, tar, potash, tallow, and marble. Carlscrona is the principal depot of the Swedish navy.

CARLSRUHE (German, which means *the rest of Charles*), the capital of the grand-duchy of Baden, was laid out in 1715, and is one of the most regularly-built towns in Europe. The castle of the grand-duke stands in the centre of the city, from which nine streets run at regular distances from each other, to the circumference of a circle enclosing the area of the city, and thus forming a star. Other streets intersect these in parallel circles. The roads leading to the city correspond to this regular disposition, which, as is often the case in strictly regular cities, often leaves upon the traveller the impression of monotony, rather than that of agreeable order. The city contains 17,232 inhabitants and 1170 houses. It is ornamented with several beautiful public buildings. The court library contains 70,000 volumes; the botanical garden, 6000 species of plants. There are also here several valuable museums and cabinets, several institutions for the promotion of literature and the fine arts, one for the deaf and dumb, and some manufactories. Lon. 20° 45′ E.; lat. 49° N.

CARLSTADT (so called from his native town, *Carlstadt*, in Franconia; his proper name was *Andrew Bodenstein*) is celebrated, in the history of the reformation, for his fanaticism as well as his misfortunes. He was professor of theology at Wittenberg. His learning enabled him to render great support to Luther in his first steps for the introductiou of a reformation. In 1520, he was included in the bull which condemned Luther; and his spirited appeal from the pope to a general council, of which he gave the first example, as well as his opinion, openly expressed, in favour of the marriage of the priesthood, which soon gained ground, was among the many proofs which he gave of his zeal for the reformation.

Whilst Luther was at Wartburg, Carlstadt's zeal urged him to acts of violence. He even instigated the people and students to the destruction of the altars and the images of the saints, greatly to the displeasure of Luther, who lost the friendship of Carlstadt by his opposition to his outrages. In 1524, he declared himself publicly the opponent of Luther, who had preached at Jena against the disturbances which he had excited, so that the elector Frederic banished him from the country in September, 1524. Carlstadt, upon this, commenced the controversy respecting the sacrament, denying, in opposition to Luther, the bodily presence of Christ in the sacrament. This controversy was carried on with the bitterest animosity; and, Zwinglius having declared himself in favour of Carlstadt's doctrine, a dispute commenced between the Swiss and Wittenberg theologians, which ended in the separation of the Calvinists and Lutherans. Carlstadt, in the mean time, being suspected, not without reason, of having taken part in the revolt of the peasants in Franconia, was obliged to wander through Germany, and, being ultimately reduced to extreme distress, sought relief of Luther, who procured him an asylum at Kemberg, on condition that he should refrain from the expression of his opinions. Here he lived nearly three years. His restless mind, however, soon led him to break his promise, by the publication of some writings in 1582; and he even went so far as to plot against Luther's person. To escape from the consequences of his conduct, he repaired to Switzerland, at the end of the same year, where he was appointed vicar of Alstadt, in the valley of the Rhine; in 1530, deacon at Zurich; and, in 1531, vicar and professor of theology at Basle, where he died in 1541 or 1543.

CARMAGNOLE; a name applied, in the early times of the French republic, to a dance, and a song connected with it. The appellation originated, probably, from the city of Carmagnola, in Piedmont. The dance was first used at the time of the indignation of the people on account of the *veto* allowed to the king on the resolves of the national assembly. The carmagnole was commonly sung and danced at popular festivals, executions, and irruptions of popular discontent. Afterwards, the name was also applied to the national guards, who wore a dress of a peculiar cut, and to the enthusiastic supporters of the revolution. Several members of the national convention,—Barrere, for instance,—by way of jest, gave this name to their communications to the assembly. —*Petits carmagnoles* is a name given, by the people in Paris, to boys who sweep chimneys and black boots, chiefly Savoyards; probably taken from the name of the city before mentioned.

CARMARTHEN. See *Caermarthen*.

CARMEL; a mountain in Palestine, constituting part of Lebanon, on the southern frontier of Galilee, in the pachalic of Acca. It consists of several rich, woody heights, separated by fertile and habitable valleys, within a circuit of about twenty-eight miles, and terminates, at the mouth of the Kischen, in a lovely plain, which forms the southern coast of the gulf of Ptolemais or Acca, on the Mediterranean. Upon different parts of this mountain there are ruins of churches and monasteries from the time of the Christian kingdom of Jerusalem, and the cave which, according to tradition, was inhabited by the prophet Elias. From the 4th century, Christian hermits have chosen mount Carmel for their abode. It was not, however, till about the middle of the 12th century that pilgrims, under the direction of Berthold of Calabria, established an association for the purpose of leading a secluded life upon this mountain, which received its rules from Albert, the patriarch of Jerusalem, in 1209, and the papal confirmation from Honorius III., in 1224. Their rules coincide nearly with those of the ancient Basilians. This is the origin of the order of Our Lady of mount Carmel. The Carmelites enumerate among their members all the prophets and holy men mentioned in the Scriptures, from Elias to Jesus; also Pythagoras, the Gallic Druids, the holy women of the New Testament, and the hermits of Christian antiquity. Christ they consider as their particular protector, and his apostles as missionaries from mount Carmel. The Jesuit Papebroch has shown how utterly unfounded their pretensions are, and no well-informed man believes their account of their origin. Yet they were allowed, as late as in the 18th century, by Benedict III., to erect the statue of the prophet Elias, as the founder of their order, in St Peter's church in Rome. Being driven by the Saracens to Europe, they adopted, in 1247, a milder rule, and the forms of monastic life. They also became divided into four independent bodies: 1. The *observantes*, who wore shoes; 2. The *congregation of Mantua*; 3. The *bare-footed friars*, and *bare-footed* or *Theresian nuns*, in Spain; 4. The *bare-footed friars* in Italy. The two latter classes observe the elder and stricter rule. The knightly order of Our Lady of mount Carmel, established by Henry IV. in France, is connected with the Carmelites only by the name. As their mode of life precludes all useful exertion, governments, in modern times, have taken measures to prevent the extension of their order, and the admission of novices has been forbidden except in Spain, Portugal, and America. In Paris, a nunnery of this order was established in 1817, under the royal protection.

CARMER (John Henry Casimir), count of; high chancellor and minister of justice in Prussia. He rendered the greatest service to Prussian jurisprudence by the assistance which he afforded in the preparation of the Prussian code, and still more by the improvements which he introduced into the civil process of that country. (See *Prussian Code*.) He was born in 1721, entered the Prussian service early, and was soon noticed by Frederic the Great. After fifty years' service, he retired from official life, and died in 1810, near Glogau, in Silesia.

CARMINE, the most splendid of all the red colours, is made from the cochineal insect, or *coccus cacti*. It is deposited from a decoction of powdered cochineal in water, to which alum, carbonate of soda, or oxyde of tin is added. As the beauty of this valuable colour is affected, not only by the mode of applying it, but also by the quantity of the ingredients mixed with it, we find various recipes for the preparation of it. The manufactories which prepare the best carmine carefully conceal the method. The best natural cochineal is found in Mexico.

CARMONTELLE, a French poet, known by his *Proverbes dramatiques* (10 vols.), born in 1717, at Paris, died there 1806. These little pieces are without much connexion in themselves, being, in fact, only a series of dramatic scenes, but are well adapted for private theatres. The fertility of Carmontelle was as extraordinary as his ease in writing. He is said to have left, besides his printed works and his pieces for the theatre, more than a hundred volumes of manuscripts.

CARNATIC; a country in Hindostan, lying along the coast of Coromandel, from cape Comorin, in lat. 8°, to 16° N.; 500 miles in length, and from 40 to 100 in breadth. The Carnatic or Carnada, anciently called *Narasinha*, in early periods, was subject to the king of Bisnagar. Since the year 1787, the whole country has been under the authority or absolute control of the English East India Company. The soil is generally sandy, and the climate is one of the hottest in India. The country of Ongole, Mudura, and Tino-

velly is included in the Carnatic. The principal towns are Arcot, Madras, Ongole, Pondicherry, Cuddalore, Tanjore, Tritchinopoly, Mudura, and Tinevelly. The principal rivers are the Pennar, the Paliar, and the Cauvery.

CARNATION (from the Latin *caro, carnis*, flesh) signifies, in the fine arts, the colouring of the flesh of the human body. The use of carnation requires very attentive study, and great skill in the artist. It varies with the sex of the individual, with the classes and countries to which the subjects belong, with the passions, the state of the health, &c. The cheeks are, in a healthy subject, of a lively red; the breast, neck, and upper part of the arms of a soft white; the belly yellowish. At the extremities, the colour becomes colder, and, at the joints, assumes a violet tint, on account of the transparent appearance of the blood. All these shades require to be softly blended. Two faults in carnation are chiefly to be avoided—hardness, the fault of the masters of the fifteenth century, and too great weakness. Guido Reni not unfrequently painted his flesh so that it appeared almost bloodless. The French school has gone furthest in this respect. The flesh of the followers of this school often looks like porcelain or wax. Titian is still unrivalled in carnation.

CARNEADES, an eminent Greek philosopher, founder of the third or new academy, was a native of Cyrene, in Africa, and is supposed to have been born in the third year of the 141st Olympiad. He studied first under Diogenes the Stoic, but subsequently attended the lectures of Egesinus, who explained the doctrines of Arcesilaus; and, succeeding his master in the chair of the academy, he restored its reputation by softening the prevailing pyrrhonism, and admitting practical probabilities. The doctrine of Carneades specifically was, that, "as the senses, the understanding, and the imagination frequently deceive us, they cannot be the infallible judges of truth. but that from the impression made by the senses we infer appearances of truth, which, with respect to the conduct of life, are a sufficient guide." He was a strenuous opposer of Chrysippus, and attacked, with great vigour, the system of theology of the Stoics. He was an advocate of *free-will* against the *fate* of the same sect, and urged just the same difficulties in reconciling divine prescience with the freedom of human actions, as have divided some contending sects of Christianity. One of the most distinguished events of his life was his being joined in an embassy to Rome with Diogenes the Stoic and Critolaus the Peripatetic, in order to gain the mitigation of a fine levied by the Roman senate on the Athenians. This extraordinary embassy was successful, and Carneades so captivated the people by his eloquence, that Cato the censor, fearful of its effect on the Roman youth, persuaded the senate to send the philosophers back to their schools without delay. Carneades died in the ninetieth year of his age, continually complaining of the shortness of life, and lamenting that the same nature which composed the human frame could dissolve it.

CARNELIAN. See *Quartz*.

CARNIOLA; a duchy in the Austrian dominions. See *Austria*.

CARNIVAL. The same views which led men to propitiate the higher invisible powers by gifts, sacrifices, and purifications, also introduced fasts, abstinence from pleasure, and penances. By *fast* is meant an abstinence from the usual means of nourishment, in order to mortify the appetites, and thereby to propitiate the Deity. In every nation of importance, customs of this kind are found. Their historical origin is in the religious customs of the East where the priests were originally the physicians of the people, and prescribed these fasts as a part of the regimen necessary in this warm region, as well as from religious views. Fasts are observed to this day in the East. The religions of the Persians and the Hindoos, those of Mohammed and Moses, and of the worshippers of the Lama, insist much on fasts. Few traces of them are found in the religion of the ancient people of the North. The earliest Christians fasted on the vigils (q. v.). The fasts on the *jejunia quatuor tempestatum*, which continued for three days every quarter of the year, were penances, as was that of the period of forty days (before Easter, or rather before Good Friday, *Quadrigesimæ*), which was called, by way of excellence, *the fast*, and which commemorated the forty days' fast of Jesus in the wilderness. With regard to the origin of fasts, opinions differ. The most common is, that Telesphorus, bishop of Rome, in the middle of the second century, first instituted the forty days' fast as a rule of the church. By pope Gregory the Great, about 600, Ash-Wednesday was made the beginning of the fast, and the day before was called *fast-eve*, because in the night of this day, at twelve o'clock, the fast began. This fast was preceded by a feast of three days, very obnoxious to the strict zealots. "Christians," it is said, "on these days, deliver themselves up to voluntary madness, put on masks, exchange sexes, clothe themselves like spectres, give themselves up to Bacchus and Venus, and consider all pleasure allowable." This is the origin of the present carnival, or *Faschings*, as it is called in the south of Germany, and which continues, in that country, from Twelfth-day to Ash-Wednesday. The name *carnival* is derived from the Latin words *carne* and *vale* (according to Ducange, from the Latin denomination of the feast in the middle ages, *carne levamen*), because at that time people took leave of flesh. Previously to the commencement of their long abstinence, men devoted themselves to enjoyment, particularly during the three last days of the carnival. The carnival is nothing but the *Saturnalia* of the Christian Romans, who could not forget their pagan festivals. At least it greatly resembles the *Saturnalia*, which were celebrated, annually, in December, with all kinds of mirth, pleasure, and freedom, in honour of Saturn, and the golden age when he governed the world, and to preserve the remembrance of the liberty and equality of man in the youth of the world. In Rome, the carnival brought to view, in a lively manner, the old *Saturnalia* in a new form. During the last days of the carnival, and particularly during the day which preceded the long fast, mummeries, plays, tricks, and freedom of every kind, abounded. From Italy, the modern *Saturnalia* passed to the other Christian countries of Europe. In the amusements of this period the dramatic poetry of Germany had its origin, after the cities had attained a flourishing condition. Its first traces appeared in the thirteenth century. The mummeries of the carnival produced the idea of adopting some character, and carrying it through. To please the multitude, and make the laugh more certain, the manners of common life were caricatured. These exhibitions afterwards became more cultivated and developed. "On fast-eve," says Flogel, in his History of Comic Literature, vol. iv. p. 292, "persons in disguise sometimes went from one house to another, to make sport with their friends and acquaintances. A merry society of this kind formed a plan to represent some scene in their disguises, and hold a regular conversation at one of these mummeries. The unknown players received praises, entertainments, or presents. Encouraged by this success, the company grew stronger, their fables and speeches became longer by degrees, until they attained to regular re-

presentations of human life." It was in Nuremberg, renowned for its wares and its wit, that the first fasteve's play was produced, coarse and frolicsome, to suit the taste of the citizens. These pieces have a near relationship to the masques of the English and the farces of the French, as have the spiritual fasteve's plays, religious burlesques, to the Mysteries and Moralities. According to the ancient custom, these plays were opened and closed by a crier or herald. The carnival is celebrated in modern times with the greatest show and spirit at Venice and Rome. In the former place, it begins after Christmas. The diversions of it are shows, masquerades, the amusements of the place of St Mark, and sometimes, in case of the visits of great princes, a *regatta*, or boat-race. After this, there was a second carnival in Venice, the Venetian mass, called also the *festival of the Ascension*, and the *Bucentaur festival*, because it commonly began on Ascension-day, and because the celebration of the marriage of the doge with the Adriatic sea was connected with it. It continued fourteen days. No character-masks were worn there, however, except Venetian dominos. The carnival at Rome (see Goethe's excellent description, *Das Romische Carneval*, and that of lady Morgan) continues but eight days, and is occupied mostly in masquerades and races. Since the return of peace, the carnival has been celebrated again in Cologne, on the Rhine, under the direction of the *committee of fools*, to the great satisfaction of all who were present. In Spain, the carnival is called *carnestolendas*.

CARNOT, Lazare Nicholas Marguerite; born at Nolay, in Burgundy, 1753; the son of an advocate. From his youth, he exhibited an uncommon talent for the mathematical and military sciences, entered the corps of engineers, and rose in office by the favour of the prince of Condé. He published, afterwards, Mathematical Essays, which caused him to be elected a member of several learned societies. His eulogy on Vauban received the prize of the academy at Dijon. At the beginning of the revolution, he was captain in the corps of engineers. In 1791, he was appointed deputy to the constituent assembly, but at first took part only in military affairs. At his proposal, the officers of the nobility were removed from the army, and others substituted from the citizens. As a member of the convention, he voted for the death of Louis. In the following March he was sent to the *army of the north*, where he deprived the cowardly general Gratien of his command on the field, put himself at the head of the army, and repulsed the enemy. On his return to the convention, he was made a member of the committee of public safety (q. v.). The influence of Carnot in the military operations now began to be more deeply felt. In possession of all the plans deposited in the archives of Louis XIV., he organized and directed the French armies; and his direction undoubtedly contributed very much to their success. After the fall of Robespierre, he was often accused, but always acquitted, because his duty had been to take care of the defence of the country, and he could not be made answerable for the cruel decrees of Robespierre, in which Carnot's name, as he was a member of the committee, of course, was to be found. At the establishment of the directory, in 1795, Carnot was chosen a member, and for some time maintained an important influence. Barras at length succeeded him in the department of war, and was ever after his enemy. His plan for the overthrow of Barras was unsuccessful, and with some others he was sentenced to transportation on the 18th Fructidor (Sept. 4), 1797. He fled to Germany, and published a defence, which was eagerly read in Paris, and, by the exposure of the conduct of his former colleagues, hastened their overthrow on the 30th Prairial (June 18), 1799. After the 18th Brumaire, Carnot was recalled, and appointed *inspecteur aux revues*, and two months later, in April, 1800, minister of war. He soon after retired into the bosom of his family, but was called to the tribunate, March 9, 1802. The same inflexible integrity and republican principle, which had hitherto distinguished him, did not now desert him. He often opposed the views of the government, voted alone against the consulship for life, and resisted strenuously the proposal for the imperial dignity. He remained, however, a member of the tribunate till it was abolished, passed the next seven years of his life in retirement, and published several valuable military works. In 1814, Napoleon gave him the chief command at Antwerp. He connected a vigorous defence with a careful regard for the interest of the city, which, by the command of Louis XVIII. he afterwards surrendered to the British general Graham. He still retained his titles and his honours, but, as a firm republican, he could never expect the favour of the court; particularly as, in his memorial to the king, he openly and severely censured the measures of government, in consequence of which he was passed over in the new organization of the academy of sciences. When Napoleon was once more at the helm of state, in 1815, he made Carnot count and peer of the empire, and pressed upon him the ministry of the interior. Carnot discharged the difficult duties of this office with his usual integrity. After the emperor's second fall, he was made a member of the provisory government of France, and was afterwards the only one of the members of it comprehended in the ordinance of July 24. He retired to Cerney, where he employed his pen on political subjects; then to Warsaw, in 1815, with his family; and, finally, to Magdeburg, where he died Aug. 3, 1823. (See the *Corresp. de Nap. Bonap. av. le Cte. Carnot pend. les* 100 *Jours* (Paris, 1819), and *Carnot's Leben* (Carnot's Life), by Korte.) The brothers Baudouin, in Paris, who have in their possession all Carnot's manuscripts, published, in 1824, *Mem. histor. et militaires sur Carnot, redigés d'après ses Manuscrits, sa Corresp. inédite, et ses Ecrits*, etc. *par Tissot*. Among Carnot's writings, the most valuable are his *Essai sur les Machines; Reflexions sur la Métaphysique du Calcul infinitesimal; Sur la Géometrie du Position; De la Défense des Places fortes; Exposé de la Conduite politique de Carnot, depuis le* 1 *Juill.*, 1814. In Magdeburg, Carnot published *Mémoire sur la Fortification primitive*, and a volume of poems. He was rigid in his love of virtue, a scholar, a general, and an inflexible republican. He was universally esteemed both in France and in foreign lands, and was honoured by all parties. Carnot's life is one of those which ought to be familiar to every young republican, like that of Barneveldt.

CARO, Annibale, one of the most celebrated Italian authors of the sixteenth century, born 1507, at Citta Nuova, in the March of Ancona, after the death of his patron, Gaddi, 1543, was appointed secretary to Pietro Ludovico Farnese, duke of Parma and Piacenza, who intrusted him with several missions to Charles V. After the assassination of the duke, his own life was in considerable danger. He took refuge in Parma, and was treated in a friendly manner by the new duke, Octavio Farnese, whose two brothers, the cardinals Ranuccio and Alexander, took him successively into their service. With the latter he remained from 1548 to his death in 1566, and received from him several ecclesiastical preferments. Caro devoted himself chiefly to the study of numismatics and the Tuscan language, and his pure and elegant style, in verse and prose, soon became

generally admired. His translation of the Æneid, in blank verse, is excellent. After his death appeared a translation by him of Longus, and of Aristotle's Rhetoric; also *Rime* and *Lettere*, the former of which are admired for the elegance of the verse, and the latter as models of beautiful Italian prose. He belongs to the most elegant writers of Italian literature.

CAROLINA. This name is generally given to a famous law of the German empire, of the year 1532, under Charles V., which he called himself an ordinance of criminal procedure (*Peinliche Gerichtsordnung*). From him it was, at a later period, called *Constitutio criminalis Carolina*, or, shortly, *Carolina*. The arbitrary administration of justice, the disorder and cruelty which had become customary in the courts of Germany, where many a process was begun and ended with the torture, and persons were sentenced even to death without regular process, gave occasion to this law. From the beginning of the *peace of the land* the necessity of such a law was felt throughout the country; but it was difficult in this, as in all other cases, to make the different members of the empire agree on one general measure. The baron John von Schwarzenberg, a man of talent and a patron of science (of the family of the present princes of Schwarzenberg), was chiefly instrumental in introducing this ordinance. He was born in 1463, became minister of state of the prince-bishop of Bamberg, and succeeded in procuring an ordinance of criminal procedure for Bamberg to be drawn up and published in 1507. The same was also adopted, in 1510, by the margrave of Brandenburg and Franconia; and, at last, a law of criminal procedure for the empire at large was passed by the diet at Regensburg, in 1532, which, for that time, was a very great step, and had a salutary influence. Several German princes, as the elector of Saxony, the elector of Brandenburg, and of the palatinate, protested against it, in order to protect the laws of their states and their own privileges against the legislative power of the emperor; but at last the *Carolina* was established in almost every part of the empire. See Malblank's *Geschichte der peinlichen Gerichtsordnung Kaiser Karls V.*, 1783.

CAROLINA MARIA; wife of Ferdinand I., king of the Two Sicilies, daughter of the emperor Francis I., and of Maria Theresa, born 13th August, 1752; an ambitious and intelligent woman, but, unfortunately, without firmness of character. According to the terms of her marriage contract, the young queen, after the birth of a male heir, was to have a seat in the council of state; but her impatience to participate in the government would not allow her to wait for this event, previous to which she procured the removal of the old minister, Tanucci, who possessed the confidence of the king and of the nation, and raised a Frenchman, named Acton, to the post of prime minister, who ruined the finances of the state by his profusion, and excited the hatred of all ranks by the introduction of a political inquisition. The queen, too, drew upon herself the dislike of the oppressed nation, by co-operating in the measures of the minister; and banishments and executions were found insufficient to repress the general excitement. The declaration of war by Naples against France (1798) was intended to give another turn to the popular feeling; but the sudden invasion of the French drove the reigning family to Sicily. The revolution of cardinal Ruffo in Calabria, and the republican party in the capital, restored the former rulers in 1799. The famous lady Hamilton now exerted the greatest influence on the unhappy queen, on her husband, on the English ambassador, and admiral Nelson, and sacrificed more victims than Acton and Vanini had formerly done. (See *Speziale*.) After the battle of Marengo, 12,000 Russians could not prevent the conquest of Naples by the French, and the formation of a kingdom out of the Neapolitan dominions for Joseph (Bonaparte), who was afterwards succeeded in the same by Joachim (Murat). The queen was not satisfied with the efforts which the English made for the restoration of the old dynasty, and thereupon quarrelled with lord Bentinck, the British general in Sicily, who wished to exclude her from all influence in the government. She died in 1814, without having seen the restoration of her family to the throne of Naples.

CAROLINA, NORTH; one of the United States; bounded N. by Virginia, E. by the Atlantic, S. by South Carolina, and W. by Tennessee; lon. 75° 45 to 84° W.; lat. 33° 50′ to 36° 30′ N.; 430 miles long, and 180 broad. Square miles, 50,000. Population in 1790, 393,751: in 1800, 478,103: in 1810 555,500; 179,090 blacks. Population in 1820, 638,829; whites, 419,200; white males, 209,644; white females, 209,556; slaves, 205,017; free coloured, 14,912: persons engaged in agriculture, 174,196; in manufactures, 11,844; in commerce, 2,551. Militia in 1817, 50,387.—This state is divided into sixty-three counties. There are no large towns in this state. Raleigh is the seat of government. The other most considerable towns are Newbern, Fayetteville, Wilmington, Edenton, Washington, Hillsborough, Halifax, Tarborough, Salisbury and Salem.—The legislative power is vested in a senate and house of commons, both chosen annually. One senator and two members of the house of commons are sent from each county, and one of the latter from each of the towns of Newbern, Wilmington, Edenton, Fayetteville, Halifax, Salisbury, and Hillsborough. The governor is chosen by joint ballot of both houses, and is eligible three years in six.—The principal denominations of Christians in North Carolina are Methodists, Baptists, Presbyterians, Quakers, Moravians, and Episcopalians.—There is a respectable institution, entitled the *university of North Carolina*, at Chapel Hill. Academies are established at various places, and an increasing attention has, of late, been paid to education.—The principal rivers are the Roanoke, Chowan, Neuse, Pamlico or Tar, cape Fear, Yadkin, and Catawba. Of these the cape Fear affords the best navigation, and is ascended by vessels of 300 tons to Wilmington, and by steamboats to Fayetteville. The two most considerable sounds on the coast are those of Pamlico and Albemarle.—Dismal swamp lies partly in North Carolina and partly in Virginia. Little Dismal, or Alligator swamp, is between Pamlico and Albemarle sounds.—There are three noted capes on the coast, viz., cape Hatteras, cape Lookout, and cape Fear, which are all dangerous to seamen.

North Carolina, in its whole width, for about sixty miles from the sea, is generally a dead level, varied only by occasional openings in the immense forest with which it is covered. After traversing this tedious plain, we are at length relieved by the appearance of hills and mountains, from the summits of which we behold a beautiful country, which stretches west far beyond the range of vision, and is adorned with forests of lofty trees.—In the level parts, the soil, generally, is but indifferent. On the banks of some of the rivers, however, and particularly the Roanoke, it is remarkably fertile; and in other parts of this champaign country, glades of rich swamp, and ridges of oak land, of a black and fruitful soil, form an exception to its general sterility. The sea coasts, the sounds, inlets, and lower parts of the rivers, have, invariably, a soft, muddy bottom. That part of the state which lies west of the mountains is, for

the most part, remarkably fertile, and abounds with oak-trees of various kinds, walnut, elm, linn, and cherry-trees; the last of which not unfrequently attains the size of three feet in diameter. The soil and productions, in the hilly country, are nearly the same as in the Northern States. Wheat, rye, barley, oats, and flax are the crops most generally cultivated, and seem to suit well the nature of the soil. Throughout the whole state, Indian corn and pulse of all kinds are abundant. Cotton is raised in considerable quantities. North Carolina abounds in iron ore; and it is the only one of the United States in which gold has been found in any considerable quantities. The gold mines, which have lately excited a good deal of interest, though they have not yet proved very productive, are found on the Yadkin and its branches, and extend over a district comprising about 1000 square miles. In almost any part of this territory, gold may be found in greater or less abundance, mixed with the soil. It exists in minute grains or particles, and is also found in lumps of one or two pounds' weight. Of the plains in the low country, the large natural growth is, almost universally, pitch pine, a tall and beautiful tree, which grows here to a size far superior to the pitch pine of the Northern States. This valuable tree affords pitch, tar, turpentine, and various kinds of lumber, which, together, constitute about one-half of the exports of North Carolina. It is of two kinds, the common and the long-leaved. The latter differs from other pines, not in shape, but in the length of its leaves, which are nearly half a yard long, and hang in large clusters. The trees in the low countries, both of North and South Carolina, are loaded with quantities of a long, spongy moss, which, hanging in clusters from the limbs, gives the forests a singular appearance. The misletoe frequently engrafts itself upon the trees in the back country. In this part, plums, grapes, blackberries, and strawberries, grow spontaneously; also several valuable medicinal plants, as ginseng, Virginia snakeroot, Seneca snakeroot, and some others. The rich bottoms are overgrown with canes, the leaves of which continue green through the winter, and afford good pasture for cattle.—North Carolina is far removed from that perfection of culture, which is necessary to give it the full advantage of the natural richness of its soil, and the value of its productions. One great cause of its backwardness, in agricultural improvement, is the want of inland navigation, and of good harbours. It has several large rivers, but their mouths are blocked up with bars of hard sand. The best of the indifferent harbours, in this state, are those of Wilmington, Newbern, and Edenton. The most of the produce of the upper country, consisting of tobacco, wheat, maize, &c., has hitherto been carried to Charleston, South Carolina, and to Lynchburg, and Petersburg, Virginia. Since 1815, the state has been zealously engaged in an extensive system of internal improvements. These improvements relate to the navigation of the sound, inlets, and the rivers Roanoke, Tar, Neuse, cape Fear, Yadkin, Catawba, &c.; the construction of canals and roads, and the draining of marshes and swamps.—Like all the Southern States, North Carolina has a considerable diversity of climate, occasioned by the physical peculiarities of its different parts. In the level part of the country, intermittent fevers are frequent during the summer and autumn. During these sickly seasons, the countenances of the inhabitants have a pale-yellowish hue, occasioned by the prevalence of bilious affections. Many fall victims, during the winter, to pleurisies and peripneumonies. In the western and hilly parts, the air is as pure and salubrious as in any part of America, and the inhabitants live to a great age. The heat of the summer's day is succeeded in the evening by a grateful and refreshing coolness. Autumn is temperate and serene, and, in some years, the winters are so mild, that autumn may be said to continue till spring. The wheat harvest commences in the beginning of June, and that of Indian corn early in September.—In 1827, merchandise to the value of 276,791 dollars was imported into North Carolina, and 449,237 dollars' worth exported. (For similar accounts of preceding years, see Watterson and Zandt's *Tabular Statistical Views*, Washington, Jan. 1829.

Historical Sketch of North Carolina. In 1586, the first attempt was made by the English to colonize North America, under a patent to Sir Francis Drake. A small colony was left on the Roanoke in 1587, but was never again to be found; all attempts to ascertain their fate were fruitless. Some emigrants from Virginia penetrated into the country about 1650, and made the first actual settlement of whites. On the early Spanish maps, what is now called *Carolina* had been marked as part of Florida. The French had given it the name of *Carolina* in honour of king Charles IX., when they made the disastrous attempt to colonize the North American coast, noticed under the head of *Florida*. The name *Carolina* prevailed. In 1661, a second English colony from Massachusetts arrived, and established themselves at cape Fear river. In 1667, after many vexatious struggles, the infant colony obtained a representative government. Two years later, the fanciful constitution, so famous under the name of *Locke's scheme of government*, was introduced. This wild project was soon abandoned; and, like other English colonies, Carolina advanced but slowly, and experienced the horrors of Indian warfare as late as 1712. Previous to 1717, Carolina had been a proprietary government, but, in that year, became a royal one by purchase, and continued such until the revolution in 1775. In 1720, the two Carolinas were separated into North and South Carolina. The inaccessible coast of North Carolina gave it very great advantages in the revolutionary war. Those destructive inroads, from which other states along the Atlantic suffered so much, were here impracticable. Though, however, less exposed, the people of this state evinced their full share of sympathy with the residue of the American people. A convention was assembled at Halifax, where, on Dec. 18, 1776, the existing constitution was adopted. Since that auspicious event, it may be doubted whether any other community ever passed fifty-two years with less disturbance. (*Darby's View of the United States.* See *Carey and Lea's American Atlas*).

CAROLINA, SOUTH; one of the United States; bounded N. by North Carolina, E. by the Atlantic, S. W. and W. by Georgia; lon. 78° 24′ to 83° 30′ W.; lat. 32° to 35° 8′ N.; 200 miles long, 125 broad; containing 30,000 square miles. Population in 1790, 240,000: in 1800, 345,591: in 1810, 415,115; 200,919 blacks: in 1820, 502,741; whites, 237,440; white males, 120,934; white females, 116,506; slaves, 258,475; free coloured, 6,826. Militia in 1821, 23,729.—South Carolina is divided into thirty districts. Columbia is the seat of government, but Charleston is the largest town.—The legislature consists of a senate and house of representatives. The senate consists of forty-three members, chosen every four years by districts. The representatives are chosen every two years. The governor and lieutenant-governor are chosen biennially, by a joint ballot of both houses.—The principal denominations of Christians in South Carolina are Presbyterians, Episcopalians, Baptists, and Methodists.—Education is liberally patronized by the state government. The two

literary institutions are the college of South Carolina at Columbia, and Charleston college, in the city of Charleston.—The distinguishing virtues of the Carolinians are hospitality to strangers, and charity to the indigent and distressed. The planters in the low country, who, in general, have large incomes, live in a luxurious and splendid style, devoting much of their time to the pursuit of pleasure, and possessing much of that pride and dignity of spirit, which characterize an independent country gentleman. The virtues of the farmers of the upper country are less brilliant, but more substantial. They have fewer vices, are of more frugal and industrious habits, and exhibit greater fortitude in the reverses of fortune. In the low or alluvial country, labour in the field is performed almost wholly by slaves, who, in this part of the state, exceed the free inhabitants in the ratio of more than three to one. This division, comprising less than one-third of the territory of South Carolina, contains more than half of the slaves, and only about one-fifth of the whites.—The principal rivers are the Waccamaw, Pedee, Black river, Santee, Cooper, Ashley, Stono, Edisto, Asheppo, Cambahee, Coosaw, Broad, and Savannah.

South Carolina is divided by nature into two parts, which, from their physical situation, have been called *Upper* and *Lower Carolina*. The latter is supposed to have once been under the ocean. Towards the coast, the country is a level plain, extending more than a hundred miles westward from the sea. Here the eye finds no relief from the dull uniformity of boundless forests, swamps, and level fields. This fatiguing plain is succeeded by a curious range of little sand hills, resembling the waves of an agitated sea. This singular country occupies an extent of about sixty miles. It is extremely barren, enlivened here and there by spots of verdure, or by some straggling pines; and its few inhabitants earn a scanty subsistence by the cultivation of corn and sweet potatoes. After passing these sand hills, we come next to a remarkable tract of ground, called the *Riage*, which, on its approach from the sea, is lofty and bold, but on the north-west is level from its summit. This is a fine belt of land, extending from the Savannah to Broad river, fertile, well cultivated, and watered by considerable streams. The country beyond the ridge resembles, in its scenery, the most interesting of the Northern States. The traveller is gratified by the pleasant alternation of hill and dale. The lively verdure of the hills is contrasted with the deeper tints of the extensive forests, which decorate their sides; and, in the valleys, broad rivers roll their streams through the varied beauties of luxuriant and cultivated fields. From these delightful regions, the ground still continues to rise, till we reach the western limit of the state. Here seven or eight mountains run in regular direction, the most distinguished of which is Table mountain. Other mountains are Oolenoy, Oconee, Paris's, Glassey, Hogback, and King's. These are all in the districts of Pendleton, Greenville, Spartanburg, and York. — The soil of South Carolina is divided into six classes: 1. tide swamp; 2. inland swamp; 3. high river swamp, or low grounds, distinguished by the name of *second low grounds*; 4. salt marsh; 5. oak and hickory high land; 6. pine barren. The first two classes are peculiarly adapted to the culture of rice and hemp; the third is most favourable to the growth of hemp, corn, and indigo. The salt marsh has been much neglected. The oak and hickory land is remarkably fertile, and well adapted to the culture of corn, as well as indigo and cotton. The pine barren, though the least productive, is so much more salubrious than the other soils in the low country, that a proportion of pine barren is an appendage indispensable to every swamp plantation.

The staple commodities of this state are cotton and rice, of which great quantities are annually exported. These articles have so engrossed the attention of the planters, that the culture of wheat, barley, oats, and other crops equally useful, but less profitable, has been almost wholly neglected. So little wheat is raised throughout the state, that considerable quantities are annually imported. Cotton was not raised in any considerable quantities till as late as 1795. Before that period, indigo was, next to rice, the most important article of produce; but it is now neglected. Tobacco thrives well. The fruits which flourish best are pears, pomegranates, and water-melons: the latter, in particular, grow to an enormous size, and are superior, perhaps, to any in the world. Other fruits are figs, apricots, nectarines, apples, peaches, olives, almonds, and oranges.—The period of vegetation comprehends, in favourable years, from seven to eight months, commencing in January or February, and terminating in October or November. The frosts, generally, in the months of November, December, January, and February, are too severe for the delicate productions of more southern latitudes. The low country is seldom covered with snow, but the mountains near the western boundary often are. Frost sometimes binds up the earth, but seldom penetrates deeper than two inches, or lasts longer than three or four days. At some seasons, and particularly in February, the weather is very variable. The temperature has been known to vary forty-six degrees in one day. In Charleston, for seven years, the thermometer was not known to rise above 93° or to fall below 17° above 0. The number of extremely hot days in Charleston is seldom more than thirty in a year; and there are about as many sultry nights, in which the heat and closeness of the air are such as to prevent the enjoyment of sound sleep.—The low country is infested with all the diseases which spring from a warm, moist, and unelastic atmosphere. Of these the most frequent are fevers, from which the inhabitants suffer more than from any, or perhaps from all other diseases together. The districts of the upper country enjoy as salubrious a climate as any part of the United States. — In 1827, merchandise to the value of 1,434,106 dollars was imported into South Carolina, and 8,322,561 dollars' worth exported. (For similar accounts of preceding years, see Watterson and Zandt's *Tabular Statistical Views*, Washington, Jan. 1829.)

Historical Sketch of South Carolina. The first settlement of South Carolina by the whites appears to have been made at Port Royal, about 1670; but, until 1680, no permanent establishment was formed, when the few settlers then in the country fixed on Oyster point, between Ashley and Cooper rivers, and laid the foundation of the city of Charleston. A grant had, however, been made, in 1662, previous to the founding of Charleston, by Charles II., to lord Clarendon and seven others, of all that zone of North America from N. lat. 31° to 36°; and, two years afterwards, the boundaries were extended to N. lat. 36° 30′. The proprietary government of Carolina was, if possible, more complex than any other similar government in the English colonies. This confusion was augmented by Locke's scheme, and by religious contention, and was terminated, in 1719, by a separation of the two Carolinas, and the establishment of a royal government. One of the events of most importance in the history of South Carolina was the cultivation of rice, introduced by governor Smith, in 1695: that of cotton followed; and the colony flourished until its progress was checked by war with the Indians, and, subsequently, by the revolution. South Carolina suffered severely in the latter contest, and was the theatre of some of the most remarkable events which it produced. The

names of Marion, Sumter, and Lee conferred honour on the state. The existing government or constitution of South Carolina was adopted June 3, 1790, amended Dec. 17, 1808, and again Dec. 19, 1816. See *Carey and Lea's Atlas.*

CAROLINE AMELIA ELIZABETH; wife of George IV., king of Great Britain and Hanover, second daughter of duke Charles William Ferdinand of Brunswick (who was mortally wounded in the battle of Auerstadt), and of the princess Augusta of England, sister of George III. She was born, May 17, 1768. The young princess spent her youth in her father's court, under much constraint, till 1795, when she was married to the prince of Wales, afterwards George IV. The next year, she rejoiced the royal family and the British nation by the birth of a daughter, Charlotte Augusta. (Charlotte died Nov. 4, 1817, wife of prince Leopold of Saxe-Coburg.) She had scarcely recovered from her confinement, when her husband abandoned her, declaring that no one could force his inclinations. This was the beginning of the disgraceful dispute between the two parties, which lasted till the death of Caroline, and exposed her honour to repeated accusations from her husband; while George III., and all the British nation, favoured the deserted bride. (See *George IV.*) The princess of Wales lived retired from the court, at a country-seat at Blackheath, where she devoted herself to the arts and sciences, to benevolence and the gratification of her taste, till 1808. Meanwhile, many reports were circulated, accusing her of illicit connexions with captain Manly, Sir Sidney Smith, and others, and of being the mother of a boy; on account of which the king instituted an inquiry into her conduct, by a ministerial committee. They examined a great number of witnesses, and acquitted the princess of the charge, declaring, at the same time, that she was guilty of some imprudences, which had given rise to unfounded suspicions. The king confirmed this declaration of her innocence, and paid her a visit of ceremony. She afterwards received equal marks of esteem from the princes, her brothers-in-law. The duke of Cumberland attended the princess to court and to the opera. The reports above mentioned were caused by the adherents of the prince of Wales and the court of the reigning queen, who was very unfavourably disposed towards her daughter-in-law. On this occasion, as on many others, the nation manifested the most enthusiastic attachment to the princess. In 1813, the public contest was renewed between the two parties; the princess of Wales complaining, as a mother, of the difficulties opposed to her seeing her daughter. The prince of Wales, then regent, disregarded these complaints. Upon this, in July 1814, the princess obtained permission to go to Brunswick, and, afterwards, to make the tour of Italy and Greece. She now began her celebrated journey through Germany, Italy, Greece, the Archipelago, and Syria, to Jerusalem, in which the Italian Bergami was her confidant and attendant. Many infamous reports were afterwards circulated, relating to the connexion between the princess and Bergami. On her journey, she received grateful acknowledgments for her liberality, her kindness, and her generous efforts for the relief of the distressed. She afterwards lived in Italy a great part of the time, at a country-seat on lake Como. When the prince of Wales ascended the British throne, Jan. 29, 1820, lord Hutchinson offered her an income of £50,000 sterling, the name of *queen of England*, and every title appertaining to that dignity, on the condition that she would never return to England. She refused the proposal, and asserted her claims, more firmly than ever, to the rights of a British queen, complained of the ill treatment shown to her, and exposed the conspiracies against her, which had been contrived by a secret agent, the Baron de Ompteda, of Milan. Attempts at a reconciliation led to no favourable result. She at length adopted the bold resolution to return to England, where she was neither expected nor wished for by the ministry, and, amid the loudest expressions of the public joy, arrived from Calais, June 5, and, the next day, entered London in triumph. The minister, lord Liverpool, now accused the queen before the parliament, for the purpose of exposing her to universal contempt as an adulteress. Whatever the investigations of the parliament may have brought to light, the public voice was louder than ever in favour of the queen; and, after a protracted investigation, the bill of pains and penalties was passed to a third reading only by a majority of 123 to 95; and the ministers deemed it prudent to delay proceeding with the bill for six months, which was equivalent to withdrawing it. Thus ended this revolting process, which was, throughout, a flagrant outrage on public decency. In this trial, Mr Brougham acted as the queen's attorney-general, Mr Denman as her solicitor, and Drs Lushington, Williams, and Wilde as her counsel. Though banished from the court of the king, her husband, the queen still lived at Brandenburg house, in a manner suitable to her rank, under the protection of the nation. In July, 1821, at the coronation of George IV., she first requested to be crowned, then to be present at the ceremony. But, by an order of the privy council, both requests were denied, and, notwithstanding the assistance of the opposition, she suffered the personal humiliation of being repeatedly refused admission into Westminster abbey. She then published in the public papers her protest against the order of the privy council. Soon after her husband's departure to Ireland, July 30, in consequence of the violent agitation of her mind, she was suddenly taken sick in Drury lane theatre. An inflammation of the bowels (*enteritis*) succeeded, and she foretold her own death before the physicians apprehended such an event. She died Aug. 7, 1821. The corpse, according to her last will, was removed to Brunswick, where it rests among the remains of her ancestors. Her tomb-stone has a very short inscription, in which she is called the *unhappy queen of England.* The removal and the entombing of her mortal remains gave rise to many disturbances, first in London, and afterwards in Brunswick. These were founded more in opposition to the arbitrary measures of the ministry than in respect for the memory of the queen. Two causes operated much in favour of the queen—the unpopularity of the ministry and the general feeling that the king was perhaps the last man in the whole kingdom, who had a right to complain of the incontinencies of his wife, which many, even of her friends, undoubtedly believed.

CAROLINE LAWS. See *Carolina.*

CAROLINE MATILDA, born 1751, daughter of Frederic Lewis, prince of Wales, married, 1766, king Christian VII. of Denmark, and became mother of the present king of Denmark, Frederic VII., who was born 1768. Though young and beautiful, and universally esteemed by the nation, yet she was treated with hatred and neglect by the grandmother of her husband, queen Sophia Magdalena, as well as by his step-mother, Juliana Maria, who, for some time, influenced even her husband against her. Struensee (q. v.), by profession a physician, the favourite of the king, became her friend, and both, in union with Brandt, endeavoured to gain the king from the influence of the party opposed to the queen. The reins of government came into the hands of Struensee, but the party of the king's step-mother and her

son, prince Frederic, procured (1772) the imprisonment of the queen, the counts Struensee and Brandt, and all their friends. Struensee and Brandt were tried, and executed for high treason. Even the queen was at first in danger of being condemned to death. April 6, she was separated from her husband, and confined in Aalborg, but liberated by the interference of her brother, king George III. She died May 10, 1775, at Celle, in Hanover, scarcely twenty-four years old, of a lung fever, the consequence of her grief. The interesting letter in which she took leave of her brother, the king of England, is to be found in the small work *Die lezten Stunden der Konigin von Danemark*. She was of a mild temper, and beloved by all around her.

CARP (*cyprinus*, L.); a genus of soft-finned abdominal fish, which Cuvier makes the fourth family of the order. This is a very natural genus, containing very numerous species. It is easily distinguishable by the small mouth, toothless jaws, and gills of three flat rays. The tongue and palate are smooth, but the gullet is admirably constructed for mastication, having large teeth attached to the inferior pharyngeal bones, which press the food between themselves and a gelatinous knob, connected with a bony plate that is united with the first vertebra, commonly called the carp's *tongue*. They have but one dorsal fin, and the body is covered with scales, generally of large size. They frequent fresh and quiet waters, feeding on herbs, grains, and even mud, being, perhaps, the least carnivorous of the finny race. Some of the species have a beard of small, fleshy threads at the angles of the upper jaw.—The most noted of the species are the common carp (*C. carpio*, L.), which, in many parts of the world, are bred in ponds for the use of the table, and the goldfish (*C. auratus*), believed to be originally from China, very commonly bred in ponds and vases as an ornament, on account of its beautiful colours. In his memoir on American Icthyology, Dr Mitchill enumerates four species of carp, under the names of *C. teres*, fresh-water sucker; *C. oblongus*, chub of New York; *C. chrysoleucas*, New York shiner; and *C. atronasus*, brook minnow.—The common carp of Europe is esteemed very highly for stocking ponds, being of quick growth, spawning thrice a-year. As the females do not commence breeding until eight or nine years old, it is necessary to keep up a supply of carp of that age by avoiding to destroy the females. The proportion of males to be preserved is four for every twelve females. Under common circumstances, the carp grows two or three inches in length in a year; but, where the ponds are exceedingly well supplied with food, they have been known to grow from five to eighteen inches in the same time. They thrive best in ponds having clayey or marly sides, and well provided with aquatic vegetables. In order to furnish them with fresh vegetable food, it is usual to rake the sides of the pond, left dry by evaporation, with an iron rake, and then to sow grass-seed, so that, when the pond is again filled up by the rains, there may be a growth of tender herbage for the fish. Grains of various sorts, and garbage, are frequently thrown into the pond, with a view to aid in fattening carp. A pond of one acre in extent is said to be sufficient to feed 300 carp of two or three years, or 400 of one year old. Carp, in their native condition, frequent the deepest places of ponds or rivers, where there is the least current. It is a fish which requires much patience and address in the angler. They seldom bite in cool weather, but, during hot seasons, bite very freely. The bait commonly used in angling for carp is worms, and sometimes grasshoppers. Various sweet pastes are also used, formed of honey or sugar, mingled with flour and small quantities of veal, pounded together in a mortar, till sufficiently tough to adhere to a hook without being easily washed off. A little white wool, mixed with the other ingredients, is of great assistance in giving the mass the requisite tenacity. To increase the pleasure and profit of carp fishing, it is well, for a few days previous, to have some brewer's grains or other food thrown into the water, by which the fish will be induced to collect at any particular place in greater numbers.

CARPATHIAN MOUNTAINS; one of the most extensive ranges of mountains in Europe, which covers an area of about 39,432 square miles; running from the Black sea, between Wallachia and Moldavia, through Transylvania, Galicia, and Hungary, to Silesia, there uniting itself with the Riesengebirge, at the pass of Jablunka (where are the sources of the Oder and Vistula), and sending out spurs, which reach as far as the Danube, and the spurs of the Alps. The highest points (covered with perpetual snow), called *Tatra*, rise in peaks, of which the most elevated, the Lomnitz peak (*Lomnitzer Spitze*), is over 8162 feet high. The principal chain contains much salt. On the branches, the vine is cultivated, and various metals, precious and base, are found in them. The Carpathian mountains have lately been attentively investigated by geologists, and interesting facts have been ascertained respecting them. They afford refuge to a great number of Gipsies.

CARPENTARIA; a large bay on the north coast of New Holland; lon. 130° 50′ E.; lat. 10° 20′ S. That part of the country which borders on the bay is also called *Carpentaria*.

CARPETS are thick textures, composed wholly or partly of wool, and wrought by several dissimilar methods. The simplest mode is that used in weaving Venetian carpets, the texture of which is plain, composed of a striped woollen warp on a thick woof of linen thread. Kidderminster carpeting is composed of two woollen webs, which intersect each other in such a manner as to produce definite figures.—Brussels carpeting has a basis composed of a warp and woof of strong linen thread. But to every two threads of linen in the warp, there is added a parcel of about ten threads of woollen of different colours. The linen thread never appears on the upper surface, but parts of the woollen threads are, from time to time, drawn up in loops, so as to constitute ornamental figures, the proper colour being each time selected from the parcel to which it belongs. A sufficient number of these loops is raised to produce a uniform surface. To render them equal, each row passes over a wire, which is subsequently withdrawn. In some cases, the loops are cut through with the end of the wire, which is sharpened for the purpose, so as to cut off the thread as it passes out. In forming the figure, the weaver is guided by a pattern, which is drawn in squares upon a paper. Turkey carpets appear to be fabricated upon the same general principles as the Brussels, except that the texture is all woollen, and the loops larger, and always cut. There are several carpet-manufactories in New England, which make handsome goods. The English and Americans are the only nations among whom carpets are articles of general use.

CARPI, Ugo da, a painter and engraver, flourished in the beginning of the sixteenth century. He is generally considered as the inventor of that species of engraving denominated *chiaro-oscuro*, which was afterwards carried to such perfection by Balthasar Peruzzi.

CARPI, Girolamo da, a painter of the sixteenth century, a native of Ferrara, painted many pictures for the churches there and at Bologna. He was a great admirer of Correggio and Parmegiano, whose works he copied with great success. He died in 1556.

CARRACCI, Lewis, Augustine, and Hannibal, the three founders of the Bologna, or, as it has been called, the Eclectic school of painting.

Ludovico or *Lewis Carracci*, son of a butcher, born 1555, at Bologna, appeared, at first, to be more fit for grinding colours than for transferring them to canvas. But his slowness did not, in fact, arise from deficiency of talent, but from zeal for excellence. He detested all that was called ideal, and studied only nature, which he imitated with great care. At Florence, he studied under Andrea del Sarto, and enjoyed the instruction of Passignano. He went to Parma for the purpose of studying Correggio, who was then imitated by almost all the Florentine painters. At Bologna, he endeavoured to obtain popularity for his new principles among the young artists, and united himself with his cousins, Agostino and Annibale Carracci, whom he sent, in 1580, to Parma and Venice. On their return to Bologna, the three artists began to acquire reputation, but met with the most violent opposition. Annibale, the most resolute of them, was of opinion, that they should refute the slanders in circulation by the excellence of their productions. Ludovico resolved to establish an academy for painters at Bologna, which he called the *accademia degli incamminati* (from *incamminare*, to put in the way). His first principle was, that the study of nature must be united with the imitation of the best masters. He soon gave an example of this principle in the *Prophecy of John the Baptist*, in the monastery of the Carthusians, imitating, in single figures, the style of Raphael, Titian, and Tintoretto. The finest works of Ludovico are at Bologna; for instance, those which adorn the hall in the monastery of St Michael, in Bosco, and the *Annunciation*, in the cathedral at Bologna. He excelled in architectural views and in drawing, and, in general, was very thorough in all the branches of his art. After having enjoyed his fame for a long time, at least as long as his cousins were alive, Ludovico died, in 1619, almost in poverty, seventeen years after the death of Agostino, and ten after that of Annibale. The chief reproach to which he is liable is, that he did not unite the study of the antiques with that of nature. His colouring has also been blamed.

Paolo Carracci, a brother of Ludovico, is of no importance.

Agostino or *Augustine Carracci*, mentioned above, was born in 1558, at Bologna. He soon became one of the most accomplished disciples of Ludovico, and excelled particularly in invention. He engraved more pieces than he painted, in order to please his brother Annibale, who became envious of his fame, after a picture of Agostino had obtained a prize in preference to one of his own, and another excellent picture—the *Communion of St Jerome*—had gained his brother universal admiration. Subsequently, Agostino accompanied Annibale to Rome, and assisted him in painting the Farnesian gallery. As many persons said that the engraver worked better than the painter, Annibale removed his brother, under pretext that his style, though elegant, was not grand enough. Agostino went then to the court of the duke of Parma, and painted there a picture representing the heavenly, the earthly, and the venal love. There was only one figure wanting, when, exhausted by labour and mortification, he died, in 1601. He wrote a treatise on perspective and architecture. As an engraver, he deserves great praise, and often corrected the imperfect outlines of his originals. Among his engravings are many obscene ones, which have become rare.

Annibale or *Hannibal Carracci*, his brother, born 1560, at Bologna, worked, at first, with his father, who was a tailor. By the advice of his cousin Ludovico, he learned drawing, and made the most astonishing progress, copying first the pieces of Correggio, Titian, and Paul Veronese, and painting, like them, small pictures, before he undertook large ones. In the academy founded by the Carracci, he taught the rules of arrangement and distribution of figures. He is one of the greatest imitators of Correggio. His *St Roque distributing Alms*, now in Dresden, was the first painting which gave him reputation. His *Genius of Glory* is likewise celebrated. In the Farnesian gallery, which he painted, there breathes an antique elegance, and all the grace of Raphael. You find there imitations of Tibaldi (who painted at Bologna, about 1550, with Nicolo del Abate), or Michael Angelo (the style, indeed, somewhat softened), and the excellencies of the Venetian and Lombard Schools. Out of Bologna, he is acknowledged as the greatest of the Carracci. In that city, however, Ludovico is more admired. Agostino, perhaps, had more invention, and Ludovico more talent for teaching; but Annibale had a loftier spirit, and his style is more eloquent and noble. He died of grief (1609), at the ingratitude of cardinal Farnese, who paid him for twenty years' labour with 500 gold scudi. He was buried at the side of Raphael, in the Pantheon of Rome. One of the finest pictures of Annibale Carracci is now in the possession of the earl of Carlisle at Castle-Howard. The subject is a dead Christ surrounded by the three Maries, of which there is a beautiful engraving by Rousselet.

Francesco Carracci, another brother, is unimportant.

Antonio Carracci, a natural son of Agostino, born, 1583, at Venice, has more merit. Among the many well-known disciples of the Carracci, Domenichino deserves to be particularly named.

CARRERAS; three brothers, distinguished in the revolution of Chili. José Miguel Carrera, Juan José Carrera, and Luis Carrera, were the sons of a rich landholder in Santiago, don Ignacio Carrera. One of them served in Europe until 1811, and attained the rank of lieutenant-colonel and commandant of a regiment of hussars. The three brothers took an active part in the revolution from its commencement, and, in November, 1811, obtained the effective control of the revolutionary government; don José Miguel, the eldest, being a member of the junta, and colonel in the army, and the two younger brothers being also colonels in different corps, and the military being strongly in their favour. They continued in the possession of power until 1813, when they were taken prisoners by the Spaniards, and confined at Talca. During their confinement, O'Higgins placed himself at the head of affairs. But they soon regained their liberty, and, by means of their popularity with the army, were enabled to displace O'Higgins, and resume their former influence, although not without a conflict with their antagonist. They became reconciled to him, however, and acted in concert with him at the battle of Rancagua, in October, 1814, in which the patriots were defeated, and in consequence of which the Carreras and their associates fled across the Andes. Don José Miguel left South America for the United States, seeking supplies of men and money. Meanwhile, don Juan José and don Luis remained in Buenos Ayres, where they were detained, on their parole, by Pueyrredon, and not allowed to join the army sent for the liberation of Chili, commanded by their personal enemy, O'Higgins, and his bosom friend, general San Martin. Don José Miguel found them in this condition upon his return in 1817, and was himself arrested at Buenos Ayres, but made his escape. His brothers fled from Buenos Ayres, but were apprehended,

Aug. 17, 1817, near Mendoza, and thrown into prison. Upon learning this, general San Martin despatched his secretary, Monteagudo, to bring them to trial, and, if possible, invent some plausible cause for their execution, so as to prevent their return to Chili. Accordingly, a false accusation of having murdered some obscure person in 1814 was brought against don Juan José; but, as this did not inculpate don Luis, a plot was contrived with the soldiers, and the brothers were induced to attempt their escape; after which the proceedings were resumed, and they were condemned, on the 8th of March, 1818, to be shot on the same day. They heard their sentence at three o'clock in the afternoon, and were slaughtered at six. They walked arm in arm to the place of execution, gave the word to the soldiers to fire, and embraced each other in death. So causeless were these legal murders, that public opinion charges them upon San Martin, who, finding the friends of the Carreras numerous in Chili, employed his creature Monteagudo to procure their death. With brutal cruelty San Martin sent their aged father an account of the expenses of their execution, with an order for its immediate payment. He paid the bloody charge, and, two days afterwards, expired of a broken heart. Don José Miguel resolved to avenge their death. He raised a small body of troops, natives and foreigners, and marched across the *pampas*, having found means to correspond with his friends in Santiago. His progress was viewed with great uneasiness by O'Higgins, then supreme director of Chili; for the people cherished the fondest recollections of the Carreras, whose wisdom in government, and personal condescension, affability, and munificence, had won all hearts. A conspiracy in favour of Carrera, unfortunately, was detected by O'Higgins, and suppressed. Don José Miguel arrived near Mendoza in January, 1822, and was there unexpectedly met by a superior force, and surrounded and taken prisoner, after a brave resistance. Being conducted to Mendoza, he was hurried through a brief form of trial, and executed on the very spot where his brothers suffered. Thus, by a singularly adverse fortune, perished a family of brothers, who left not their equals in patriotism, talents, and purity of character in Chili. Their friend and adviser, Rodriguez, also perished, a victim of the same enemies.—In testimony of their respect for the memory of the Carreras, the government of Chili have recently ordered the removal of their remains from Mendoza to their native country. Stevenson's *South America*, vol. iii.; *North American Review*, vol. xxiv., p. 313; Miller's *Mem.*, i. p. 383.

CARRICK;. the southern district of the shire of Ayr, the surface of which is mountainous; but in the valleys, and along the shores of the Atlantic, the ground is level, with a fine clay or loamy soil. Its chief rivers are the Girvan, the Stincher, and the Doon. It contains nine parishes. Carrick became the property of Robert Bruce, by his marriage with the heiress of the Duncans, earls of Carrick: and the title is still royal, being assigned to the eldest sons of the kings of Great Britain.

CARRICKFERGUS; the assize town of Antrim, situated ten miles from Belfast. The bay of Carrickfergus is a safe station for shipping, being tolerably protected from the land breeze, which is the most dangerous in this place. It is memorable in history as the chosen landing port of Duke Schomberg, who disembarked at Groom's-port, near Bangor, on the 13th of August, 1689, with 10,000 men; but more memorable still as the landing-place of King William III., who disembarked at a place now called White House, adjacent to the town of Carrickfergus, on the 14th of June, 1690. This bay was the scene of some of the adventures of the celebrated Paul Jones; and the French made a descent here in 1760, under the conduct of Thurot, and, for a short time, laid the town under contributions. The castle stands upon a rock projecting into the bay, and is in perfect preservation.

CARRIER. Common carriers are persons whose employment is carrying goods for hire, at stated periods, between one place and another. Carriers are one species of bailees. The material question in the contract relates to the degree of care which the carrier is obliged to exercise. By the civil law he is required to use ordinary diligence, that is, the care and diligence used by a man of common prudence in like cases. The French code follows the civil law very nearly, being, however a little more strict, as it makes the carrier answerable for the goods, except in cases of superior force, or inevitable accident, or damage arising from the quality of the articles. Down to the time of Henry VIII. the English law seems not to have imposed on the common carrier a greater responsibility than the French code. But, since the time of Elizabeth, he has been held answerable for all losses and damage not arising from the perishable nature of the article, the *act of God*, as it is called, or of a public enemy. Thus he is answerable for loss by robbers, for which the French code would excuse him. The reason of this strictness, given by chief-justice Holt in the case of Coggs *vs.* Bernard (*Raymond's Reports*, vol. ii. p. 909), is to provide "for the safety of all persons, the necessity of whose affairs obliges them to resort to those sorts of persons, that they may be safe in their ways of dealing; for else these carriers might have an opportunity of undoing all persons that have any dealings with them, by combining with thieves, and yet doing it in such a clandestine manner as would not be possible to be discovered." In regard to the continuance of the responsibility, in a case of the carriage of hops from Stourport to Manchester, and thence to Stockport, they were carried to Manchester by one set of carriers on the canal, where they were stored in their storehouse, until they should be taken by another set of carriers, to be forwarded to Stockport, and, being so stored, were burnt. The goods were considered as being in the defendants' hands, not in their character of carriers, but in that of warehouse-men; and so they were held not to be liable. Lord Kenyon said, "The case of a carrier stands by itself on peculiar grounds; he is held responsible as an insurer; but I do not see how we can couple the character of a carrier with that of a warehouse-man." In another case against the same company by Hyde (reported in *Term Reports*, vol. v., p. 389), the goods were brought to Manchester, to which place they had been brought and stored in the duke of Bridgewater's storehouse, where they were consumed by fire. The company had charged for cartage from this storehouse to the consignees' store. The goods were, from this circumstance, considered to be in the hands of the defendants, as common carriers; and they were held liable for their value, These cases consider loss by fire as not among the inevitable accidents denominated *acts of God*. The distinction was made upon this point in another case (reported in the *Term Reports*, vol. i., p. 27), of some bags of hops, which were in the course of transportation from London to Shaftesbury, deposited in a booth at Andover, and destroyed by a fire, which, at first, caught in a neighbouring booth, at a hundred yards' distance. It was said, in this case, if the fire had been occasioned by lightning, the carriers would not have been answerable; but as it was occasioned by the agency or carelessness of man, they were answerable. This risk of fire does not seem to be one which

ought to be imposed upon the carrier, upon the principle alleged in favour of his answering for a robbery, namely, for the purpose of preventing collusion with the robbers, for there appears to be no reason for collusion with incendiaries.

The above cases show that the law of England considers persons employed in transporting goods on a canal to be common carriers. The rule extends also to persons employed in inland navigation generally; and some of the old cases appear to extend it to the coasting trade; but there is no question that it is not, under a bill of lading in the usual form, applicable to foreign navigation, the risk from pirates being universally acknowledged to be a "danger of the seas," for which the ship-owner is not responsible. A waggoner or coachman, whose business is carrying for hire, is answerable as a common carrier; and the owners of the vehicle, who employ him, are also answerable in the same manner; but they are not answerable for any articles which it is known not to be their business to carry; as when the driver of a coach, intended by the proprietors, and ordinarily used, only for the transportation of passengers, took a box to carry, without the consent or authority of the owners, intending to keep the fare himself, they were held not to be answerable for the loss of the box. (*Bac. Abr.*, art. *Carrier*, vol. i. p. 553. A postmaster was held not to be under so strict a responsibility, nor answerable for money enclosed in a letter stolen from his office, for he is a public officer; but chief-justice Hale thought he ought to be answerable upon the same principle and to the same extent as a common carrier. (*Lord Raymond*, vol. i. p. 646; *Modern Reports*, vol. xii. p. 477.) A person who undertakes to carry goods in a special instance, though it be for hire, is not answerable, under the English law, as a common carrier; that is, he is not an insurer, but is only bound to use due diligence. So one who carries goods without receiving any compensation is answerable only for the loss and damage occasioned by his negligence or misconduct, and the reason of his being thus far answerable is his undertaking to carry the goods, which are accordingly put into his hands upon the presumption that he will not be guilty of any gross negligence in so doing. Mr Dane, in the first volume of his Digest, says that the law in respect to liability of carriers is the same in America (excepting Louisiana and Florida) as in England. That the carrier is liable for any loss by his own negligence or fault, or that of the persons employed by him, there is no doubt; but it admits of at least some doubt whether he is considered so far an insurer against losses not occasioned by his own fault, as in England. The original strictness of the English law, as far as it was grounded on the danger of collusion between carriers and robbers, seems hardly necessary to be kept up at present, either here or in America; for, in general, in both countries, there is little danger of such collusion between the owners of boats, stage-coaches, baggage-waggons or coasters, and gangs of robbers. Where there is no special stipulation as to the delivery of goods by the carrier, and where the contract is not modified by some very distinct and well-known usage, he must deliver the goods to the consignee, or to some person authorized by him to receive them, and the responsibility of the carrier continues till the goods are so delivered.

The particular circumstances under which goods are taken to be transported, may modify and control the responsibility of the carrier; as, where in time of scarcity, some wheat was taken by a boatman on a canal, to be carried from Wolverhampton to Manchester, on a day of the week on which it was not usual for his boat to go, and for the purpose of removing the wheat from a mob who showed a riotous disposition, he was held not to be answerable for damage done by some of the mob, who seized a part of the wheat, about four or five miles from Wolverhampton. (Edwards *vs.* Shinatt, *East's Reports*, vol. i. p. 604.) It was held, in this case, that the boatman did not take the wheat as a common carrier And if the owner of the goods contract with one of the partners in the business of transportation, with a knowledge that he alone is to be benefited, and receive the fare, his partners are held not to be liable. (*Maule and Selwyn's Reports*, vol. i. p. 255.) But carriers may limit their responsibility by giving notice of the conditions upon which, and the extent to which, they will be answerable. Thus, where carriers gave notice that they would not be answerable for any package over the value of five pounds, unless entered and paid for as such, persons sending goods were bound by such notice. And so if they give notice that they will not be answerable for the faults of the master and mariners, provided the notice is so given as to afford ground of presumption of its reaching the party for whom the goods are carried, or in such way that it shall be his fault if he does not receive the notice.

CARRIER, John Baptist, born in 1756, at Volai, in Upper Auvergne, an obscure attorney at the beginning of the first French revolution, was chosen, in 1792, member of the national convention, aided in the establishment of the revolutionary tribunal, March 10, 1793, and exhibited the wildest rage for persecution. He voted for the death of Louis XVI., demanded the arrest of the duke of Orleans, April 6, 1793, and contributed greatly to the revolution of May 31. Oct. 8, 1793, he was sent to Nantes with a commission to suppress the civil war by the exercise of greater severity than had yet been used. The prisons were already full, while the defeat of the Vendeans near Savenay increased the number of prisoners. Multitudes, informally and precipitately condemned, were executed daily; but Carrier found this process too slow. He resolved, therefore, to destroy the prisoners in a mass, and without a trial. He caused ninety-four priests to be conveyed to a boat with a perforated bottom, under pretence of transporting them, but, in reality with a view of having them drowned by night. Every day this artifice was repeated. In the evening, the destined victims, of every age and of both sexes, were brought to the boats. Two were tied together, and plunged into the water, at the point of the bayonet and the edge of the sabre. The executioners sometimes amused themselves by tying together a young man and woman; and they called these *noyades* (republican marriages). Besides this, more than 500 prisoners were daily shot in the quarries at Gigan. For more than a month, these deeds of madness were perpetrated. It has been estimated that 15,000 individuals perished in this way. The banks of the Loire were strewed with the dead, and the water was so polluted, that it was prohibited to drink it. Some months before the fall of Robespierre, Carrier was recalled. The 9th Thermidor (July 27), 1794, he was apprehended, and brought before the revolutionary tribunal, which condemned him to death, Dec. 16, 1794.

CARRIER PIGEON (*pavedette, columba tabellaria*). This bird is a native of the East; and the practice of sending letters by pigeons belongs, therefore, principally to Eastern countries. The pigeons chosen for this service are called, in Arabic, *hamahn*. They have a ring of particoloured feathers round the neck, red feet, covered with down, and build their nests in the neighbourhood of human habitations. In the province of Irak (that is, Chaldæa, Babylonia, and

Assyria), white pigeons are trained with the least difficulty. The first pigeon used as a messenger, some consider to be that which Noah sent from the ark, and which returned with the leaf of the olive. An actual post-system, in which pigeons were the messengers, was established by the sultan Noureddin Mahmood, who died in 1174. It was improved and extended by the caliph Ahmed Alraser-Lidiv-Allah, of Bagdad, who died in 1225. The price of a well-trained pair of such pigeons was, at that time, 1000 dinars, that is, Arabic ducats. This flying post lasted till 1258, when Bagdad fell into the hands of the Mongols, and was destroyed by them. At present, only a few wealthy individuals in the east keep these pigeons. It requires much time and patience to train them. As soon as the young (a cock and a hen are preferred) are fledged, they are made as tame as possible, and accustomed to each other's society. They are then sent, in an uncovered cage, to the place whither they are usually to carry messages. If one of them is carried away, after having been well treated for some time, it will certainly return to its mate. A small letter is written on the finest silk-paper, sometimes on a particular kind called *bird-paper*. This is placed lengthwise under one wing, and fastened with a pin (the point being turned from the body) to a feather. It needs not to be mentioned, that no part of the letter must hang loose, lest the wind should be collected in it, the wing become tired, and the pigeon be compelled to alight. A pigeon of this kind can go a distance of upwards of 1000 parasangs (more than 2700 English miles) in a day. There were similar posts in Egypt, in 1450, for which columbaries were prepared in towers, erected at certain distances for the public security.—This custom is, however, not confined to the nations of the east. Decius Brutus, according to the elder Pliny's account, sent despatches from Modena by pigeons; and in modern times, they were made use of, during the Dutch war, by the inhabitants of Haerlem, when besieged in 1573, and in Leyden, in 1574. It is also well known, that some merchants in Paris and Amsterdam employ carrier-pigeons, in order that the course of exchange and the prices of stocks, in Paris, may be known as soon as possible in Amsterdam.

CARRO, Giovanni di; a physician of Milan, who settled in Vienna. He is celebrated for his efforts in spreading inoculation, as a protection from the small-pox, in Germany, Poland, Hungary, and Russia. He found means to overcome even the prejudices of the Turks, by sending to lord Elgin, at Constantinople, in 1800, a quantity of *virus*, together with a work of his, translated into Turkish, on inoculation. All the attempts of the British to introduce inoculation into India had been hitherto unsuccessful, because the *virus* had always been spoiled on the way. Carro procured the matter from Lombardy cows, for doctor Harford, at Bagdad. It retained all its strength, and was the means of imparting the benefits of kine-pock inoculation to India, which the Indians consider as derived from a sacred cow, and to which they have given the name of *amurtum* (immortality). Carro's *Observations et Expèriences sur la Vaccination, avec une Planche colorée* (Vienna, 1801 and 1802), and his translation (Vienna, 1802, of an English work, by J. J. Loy, on the origin of the kine-pock virus, are very valuable works. In the *Bibliotheque Britannique* are some letters deserving of notice, written by him, particularly one, dated August 27, 1803, on the antipestilential nature of the kine-pock matter.

CARROLL, Charles, for many years the last survivor of the signers of the American Declaration of Independence, was born at Annapolis, in Maryland, on the 20th of September, 1737. His grandfather, an Irish Catholic of rank, educated for a barrister, emigrated from Ireland to Maryland in the year 1691. The "surviving signer" received his classical instruction on the continent of Europe, at the college of Louis le Grand, studied the civil law at Bourges, and completed his general education in Paris. Thence he repaired to London, where he took apartments in the temple for a course of British jurisprudence. In 1764, he came back to Maryland, to enter upon a princely inheritance. Embarking in politics, he exerted his talents and influence against the stamp act, with as much earnestness as if he had nothing to lose, and had never lived under monarchical rule abroad. In 1770, he distinguished himself, particularly by opposing a stretch of prerogative on the part of the royal governor of Maryland, in a series of essays, signed the First Citizen, that obtained a complete triumph for the popular party, and for the author, even before he was ascertained, fervid compliments and thanks from all quarters. His decided and active participation, during the years 1773, 1774, and 1775, in all the measures of resistance to the ministerial policy, confirmed the confidence of the people in his dispositions and abilities. Testimony is furnished of his having, as early as 1772, foreseen and resolved to breast the occurrence of war. He entered the provincial convention in 1775, and, previous to his election as a member of congress, in 1776, was deputed, by the latter body, to Canada, with Franklin and Chase. He returned from his mission during the discussion in congress of the subject of independence, with an avidity for the declaration which prompted him to every endeavour for the immediate conversion of the Maryland legislature to that measure. He served assiduously as a member of the board of war, and continued in congress until the year 1778, after which he confined himself to the internal state business. In the year 1781, he was re-elected to the senate of Maryland, in which he had already served five years, and, in 1788, was chosen to represent Maryland in the senate of the United States, immediately after the adoption of the federal constitution. After 1801, he lived in retirement. In 1825, one of Mr Carroll's grand-daughters was married to the marquis of Wellesley, then viceroy of Ireland. Mr Carroll died Nov. 14th, 1832.

CARROLL, John, first Catholic bishop of the United States, was born in Maryland, in the year 1734. His parents were Catholics of distinguished respectability, and sent him, at the age of thirteen, to the college of St Omer's, in Flanders, where he remained for six years, when he was transferred to the colleges of Liege and Bruges. In 1769, he was ordained a priest, and soon after became a Jesuit. In 1770, he accompanied lord Stourton, the son of an English Catholic nobleman, on a tour through Europe, in the capacity of private tutor; and, on his return to Bruges, in 1773, accepted a professorship in the college. Shortly afterwards, he was on the point of going back to his native country; but his voyage was prevented by the intelligence of the entire suppression of the Jesuits by the pope; and he retired to England, where he resided until 1775, when he returned to America. His stay in Europe was prolonged in order that he might assist his brethren in procuring a mitigation of the severe sentence that had been passed upon them. He acted as secretary-general to the dispersed fathers in their remonstrances with the courts by which they had been persecuted. Upon his arrival in Maryland, he entered upon the duties of a parish priest. In 1776, at the solicitation of congress, he accompanied doctor Franklin, Charles Caroll of Carrollton, and Samuel Chase, on a mission to Canada, designed to induce the people of that province to preserve a

neutral attitude in the war between England and the colonies, but was unsuccessful. The Roman Catholic clergy of the United States having requested from the pope the establishment of a spiritual hierarchy here, in preference to being under the superintendence of one in England, Mr Carroll was appointed vicar-general in 1786, when he fixed his abode in Baltimore. In 1789, he was named first Catholic bishop of the United States, and went to England, in the summer of 1790, where he was consecrated. In the same year, he returned to Baltimore, and, as the seat of his episcopal see was established in that city, assumed the title of *bishop of Baltimore*. He was universally esteemed and beloved for the exemplary manner in which he discharged his duties, the mildness and courtesy of his manners, and the sanctity of his life. He lived in friendly communion with persons of other sects, his character being entirely devoid of intolerance. A few years before his demise, he was elevated to the archiepiscopal dignity. He died Dec. 3d, 1815, in the eighty-first year of his age.

CARRON; a village of Scotland, on the banks of a stream of the same name, in Stirlingshire, and about three miles from the shore of the Forth. Its extensive iron-foundery is one of the most noted in Great Britain. This was established in 1760, and now employs from 2000 to 3000 individuals. There are about twenty furnaces, and many kinds of iron articles are made in great quantities, as heavy pieces of ordnance, cylinders for steam-engines, pumps, boilers, wheels, with all kinds of ponderous apparatus used in the arts. That species of ordnance called a *carronade*, used in the navy, derived its name from being first made here. Immense numbers of shot and shells, of all sizes, are annually sent from Carron. Carron is about two miles northwest of Falkirk, and twenty-six in the same direction from Edinburgh. The banks of the river Carron were the boundary of the Roman empire in Britain; for the wall of Antoninus stood within a short distance, and ran parallel to them for several miles. Two mounds, one of them fifty feet in height, called the *hills of Dunipace*, rise about the middle of its course. Tradition affirms that they were monuments of a peace between the Romans and Caledonians, and that they take their name from *dun*, a hill, and *pax*, peace. It is more probable that they are barrows.

At a place called Stonehouse, a little distance from the founderies, upon a small eminence, stood a celebrated piece of antiquity, supposed to have been a sacellum, or repository for the Roman insignia, or standard, which was pulled down by its owner, whom the antiquaries will never forgive, to make a milldam. A ground-plan and elevation of it are given by general Roy, in the thirty-sixth plate of his Military Antiquities.

CARRONADES (from the *Carron* works in Scotland, where they were first made); a sort of artillery, resembling howitzers. They are of very large caliber, and carry balls, shells, or cartouches. They are much lighter than common cannon, and have a chamber for the powder, like mortars. They are mostly used on board of ships, in close engagements, from the poop and forecastle. Sometimes they are employed in fortifications. They have been cast from twelve to sixty-eight pounders. They were first used in the North American revolutionary war.

CARROT (*daucus carota*, Linnæus) is a biennial plant, a native of Britain. The leaves are pinnatifid, and much cut. The plant rises to the height of two feet, and produces white flowers, succeeded by rough, hispid seeds. The root of the plant, in its wild state, is small, dry, sticky, of a white colour, and strong-flavoured; but the root of the cultivated variety is large, succulent, and of a red-yellow or pale straw-colour, and shows remarkably the improvement which may be effected by cultivation. Though long known as a garden plant, it is comparatively of recent introduction in agriculture. It appears to have been cultivated from an early period in Germany and Flanders, and introduced from the latter country to Kent and Suffolk early in the sixteenth century. The various uses of the carrot in cookery are well known. But, although it contains much nutriment, it is difficult of digestion, particularly if eaten raw or imperfectly boiled. Carrots are an excellent fodder for cattle and horses, either alone or mixed with hay; and, if given to cows in winter or the early part of spring, they are said to cause a great increase of milk, which will have a much less offensive taste and smell than when they are fed on turnips. Hogs thrive well upon carrots boiled with their wash. In some parts of England, this vegetable has been cultivated as a winter food for deer; and the tops have even been made into hay. Carrots contain a large proportion of saccharine matter, and various but unsuccessful experiments have been made to extract sugar from them. They have been more advantageously employed in distillation. Ten pounds' weight of carrots will yield about half a pint of very strong ardent spirit; and the carrots produced by an acre of ground, amounting to twenty tons, have been known to yield 240 gallons of spirit. A sirup made of these roots, and clarified with the whites of eggs, has been found useful for several purposes. An infusion of the seeds, and the expressed juice of the roots, are said to afford relief in fits of the gravel. A marmalade of carrots has been used with success in sea-scurvy, and a poultice prepared from them is sometimes employed in cancerous ulcers. Crickets are so fond of these roots, that they may easily be destroyed by making a paste of flour, powdered arsenic, and scraped carrots, and placing this near their habitation. Parkinson informs us that, in his day, ladies wore carrot leaves in the place of feathers. In winter, an elegant ornament is sometimes formed by cutting off a section from the head or thick end of a carrot, containing the bud, and placing it in a shallow vessel with water. Young and delicate leaves unfold themselves, forming a radiated tuft of a very handsome appearance, heightened by contrast with the season of the year.

CARRYING TRADE. See *Commerce*.

CARSTAIRS, William, a Scottish divine of political eminence, was born in 1649, at Cathcart, near Glasgow, where his father was minister. He pursued his studies at the university of Edinburgh, whence he was removed to that of Utrecht, was introduced to the prince of Orange, and intrusted with all his views in regard to Britain. He, however, returned to Scotland, with the view of entering the ministry, but, after receiving a license to preach, resolved to return to Holland. As he was to pass through London, he was employed by Argyle and his party to treat with the English exclusionists, and became privy to the rye-house plot. On the discovery of that conspiracy, he was apprehended. After a rigorous confinement in irons, he was subjected to the torture, and endured this trial with great firmness; but, being afterwards deluded with the hopes of a full pardon, and assured that his answers should never be made evidence against any one, he submitted to make a judicial declaration. The privy council violated their engagement, by producing his evidence in court against his friend, Mr Baillie, of Jerviswood. Being released, he returned to Holland, and was received by the prince of Orange as a sufferer in his cause. The prince made him one of his own chaplains, and procured his election to the office of minister of the English congregation at Leyden. He accompanied

the prince in his expedition, and always remained about his person, both at home and abroad. During this reign, he was the chief agent between the church of Scotland and the court, and was very instrumental in the establishment of the presbytery, to which William was averse. On the death of William, he was no longer employed on public business; but Anne continued him her chaplain-royal, and made him principal of the university of Edinburgh. When the union of the two kingdoms was agitated, he took a decided part in its favour. He did not long survive this event, dying in 1715, at the age of sixty-six. The memory of Carstairs is, for the most part, revered by his countrymen as that of an enlightened patriot; and few men of active power and influence have steered between parties more beneficially and ably.

CARSTENS, Asmus Jacob, a distinguished painter, born at St Jurgen, near Sleswic, in 1754, died at Rome in 1798. He studied at Copenhagen, where he produced his first picture—the *Death of Æschylus*. In 1783, he set out for Rome; but, after having seen some works of Julio Romani and Leonardo da Vinci, was obliged to return to Germany, from want of means, and ignorance of the Italian language. In Lubec, he lived almost five years by painting likenesses. A piece, containing more than 200 figures—the *Fall of the Angels*—procured him the place of a professor in the academy at Berlin. In 1792, he went to Rome. His picture of *Megapont* was compared to the productions of Raphael and Michael Angelo. His subjects were almost all taken from Homer, Pindar, Sophocles, Æschylus, Shakspeare, and Ossian. In Carstens' works, we find that effort to attain correctness of form and outline, gracefulness of attitude, and loftiness and vigour of expression, by which the works of the ancients are distinguished; but they frequently exhibit a certain harshness, arising from too close imitation. He was often defective in anatomy and perspective, and, having begun late to paint in oil, was unacquainted with the secrets of colouring. See *Fernow*.

CARTE, Thomas, an English historian, was born at Dunmoor, Warwickshire, in 1686. He was admitted at University college, Oxford, in 1698, and was afterwards incorporated at Cambridge, where he took his degree of M. A. in 1706. His first publication was entitled the *Irish Massacre set in a true Light, &c.* Incurring suspicions during the rebellion of 1715, a warrant was issued for his apprehension, which he eluded by concealment in the house of a clergyman at Coleshill. He subsequently acted as secretary to bishop Atterbury; and, as it was supposed that he was concerned in the conspiracy imputed to that intriguing prelate, he was charged with high treason, and a reward of £1000 was offered for his apprehension. He was again successful in making his escape, and, reaching France, he resided there several years under the name of *Philips*. Having obtained various introductions to persons of influence and learning, he obtained free access to the principal libraries, and employed himself in collecting materials for an English edition of the History of Thuanus. At length, queen Caroline, the liberal patroness of literary merit of every party, procured leave for his return to England. His important work, the Life of James Duke of Ormond, was published in 3 vols. folio, 1735-6. This work gained him great reputation, especially with the tory party, and led him to meditate a general history of England, as a counterbalance to the tendency of that of Rapin de Thoyras, which the tories charged with error and partiality. In 1744, he was arrested, under a suspension of the habeas corpus act, and examined, on a suspicion of being employed by the Pretender. Nothing, however, appearing against him, he was discharged. The first volume of his history, in folio, concluded with the death of king John, and might have been very well received, had not the author materially injured the credit of his work, and his own reputation as a man of sense, by the unnecessary insertion of a note, containing the ridiculous story of the cure of one Christopher Lovel, who went from Somersetshire to Paris to be touched for the king's evil by the Pretender. Still he proceeded with his work, and published two more volumes, in 1750 and 1752; the fourth, which brought down the history to 1654, not appearing until after his death. The character of this work is deservedly very high for useful and elaborate research, for which qualities it has risen greatly in esteem, since the obligations of Hume to it have been rendered apparent. In point of style, it is mean; and the prejudices of the author, who is utterly destitute of the philosophical impartiality requisite for an historian, are everywhere conspicuous: but its fidelity and exactness, with regard to facts, and the intimate knowledge of original authors displayed by the writer, will always render it valuable. Mr Carte died in April, 1754. He is the author of several works besides those already mentioned. He was a man of indefatigable industry, cheerful and entertaining in conversation, but very slovenly and ungainly in his appearance.

CARTEL; an agreement for the delivery of prisoners or deserters: also, a written challenge to a duel.—*Cartel-Ship;* a ship commissioned, in time of war, to exchange prisoners; also to carry any proposal between hostile powers. She must carry no cargo, ammunition, or implements of war, except a single gun for signals.

CARTER, Elizabeth, an English lady of great learning, was the daughter of doctor Nicholas Carter, a clergyman in Kent, and was born in 1717. She was educated by her father, and soon became mistress of Latin, Greek, French, and German; to which she afterwards added Italian, Spanish, Portuguese, Hebrew, and even Arabic. Several of her poetical attempts appeared in the Gentleman's Magazine, before she attained her 17th year, and these procured her much celebrity. In 1739, she translated the *critique* of Crousaz on Pope's Essay on Man; and, in the same year, gave a translation of Algarotti's explanation of Newton's philosophy, for ladies. In 1749, she commenced her translation of Epictetus. In 1791, Miss Carter had an interview with queen Charlotte, by the queen's own desire, and, during the remainder of her life, occasionally received visits from different members of the royal family, who paid her particular attention. She died in 1806, in the 89th year of her age, and lies interred in the burying-ground of Grosvenor chapel. The year following her death, her Memoirs were published, and a new edition of her poems; and, subsequently, her correspondence with Miss Talbot (in 2 vols., 4to), and letters to Mrs Montague and Mrs Vesey (4 vols. 8vo), all which are much esteemed.

CARTERET, John, earl of Granville, an eminent English statesman, born in 1690, was the eldest son of George lord Carteret, whose death put him in possession of that title before he was five years old. He was educated at Westminster school and Christchurch college, Oxford, where he highly distinguished himself by his classical attainments. He was introduced into the house of peers in 1711, and immediately distinguished himself by zeal for the Hanoverian succession, which acquired him the notice of George I., by whom he was raised successively to various posts of honour. In 1719 he was sent ambassador to Sweden, and mediated the peace between that country and Denmark. In 1721 he succeeded Craggs as secretary of state, and proved a most able

support to the administration by his forcible and eloquent oratory in parliament. In 1723 he accompanied the king to Hanover, and on his return was appointed lord-lieutenant of Ireland, which kingdom was at that time in a state of great discontent, not a little increased by the famous Drapier's letters of Swift. The dean, who esteemed lord Carteret for his manners and learning, expostulated with him for his prosecution of the printer of those letters. The lord-lieutenant ingeniously replied by a quotation from Virgil: *Regni novitas me talia cogit moliri.* After an administration which, upon the whole, was not unpopular, he returned to England in 1726; and, on the accession of George II., in 1727, was again appointed to the vice-royalty of Ireland, where he conducted affairs, until 1730, with great success, conciliating parties, and producing much apparent harmony, by his abilities and social talents, in which he was much aided by the countenance and humour of Swift. On his return to England, however, he became a violent opponent to Sir Robert Walpole, and, in 1741, made the famous motion for an address to remove him from the king's presence and councils, exerting all his great eloquence on the occasion. In 1742, when that dismissal was effected, he became secretary of state, and in that capacity supported measures very similar to those which he had censured in Walpole. In 1744, on the death of his mother, he succeeded to the titles of viscount Carteret and earl of Granville, and in a few weeks resigned his seals as secretary of state, unable to resist the patriotic party and the Pelhams, whom he had previously forsaken. It is unnecessary to follow him in the subsequent changes in a life of struggling and vacillating statesmanship. It is sufficient to remark, that, although obliged to yield occasionally to stronger interests, he never lost the favour of the house of Hanover; and at last died president of the council, in 1763, in the seventy-third year of his age. The natural talents and acquirements of this nobleman appear to have been eminently calculated for the sphere in which he moved. His genius was lofty and fertile, and his self-confidence equal to it; it having been said of him that he "never doubted." He was ambitious and fond of sway, but neither mercenary nor vindictive; and his own great literary attainments made him an encourager of learning in others. He was in particular the patron of doctor Taylor, so celebrated for his acquirements in the Greek language, as also of the still more famous doctor Bentley. In social life he was pleasant, good-humoured, and frank. It will not add to this nobleman's character to state that he was a decided enemy to the diffusion of education, and that he deemed ignorance the best foundation of obedience.

CARTES, Des. See *Descartes.*

CARTHAGE; the most famous city of Africa in antiquity, capital of a rich and powerful commercial republic. Dido (q. v.), fleeing from Tyre, came to this country, where the inhabitants, according to tradition, agreed to give her as much land as could be compassed by an ox-hide. Dido cut the hide into small thongs, with which she enclosed a large piece of land. Here she built the castle of Carthage, and gave the newly-founded state excellent institutions. The first period of the history of Carthage extends to the beginning of the war with Syracuse, from B. C. 878 to 480. Carthage extended its conquests in Africa and Sardinia, carried on a commercial war with the people of Marseilles and the Etruscans, and concluded a commercial treaty with Rome, B. C. 509, the original document of which, on stone, is still extant. The Carthaginians then directed their chief attention to the conquest of Sicily, with which commences their second and most splendid period, extending to the beginning of their war with the Romans, B. C. 265. When Xerxes undertook his campaign into Greece, the Carthaginians made a league with him against Gelon, king of Syracuse, but were defeated at Himera, B. C. 480, and obliged to sue for peace, and abstain from the practice of offering human sacrifices. (See *Gelon.*) In the war with Hiero, the next king, the Carthaginians conquered the cities Selinus, Himera, and Agrigentum. Dionysius the elder obtained a temporary peace. But, after Timoleon had delivered Syracuse and Sicily from the yoke of tyranny, the Carthaginians were peculiarly unfortunate. Contagious diseases and frequent mutinies reduced the strength of the city. When Sicily suffered under the tyranny of Agathocles, Carthage engaged in a war with him, and was soon attacked and severely pressed by the usurper. After the death of Agathocles, Carthage once more took part in the commerce of Sicily, when difficulties broke out there with their auxiliaries, the Mamertines. The Romans took advantage of these troubles to expel the Carthaginians from Sicily, although they had previously received assistance from them (in 275) in a war against Pyrrhus of Epirus, in Sicily and Lower Italy. Here begins the third period of Carthaginian history, embracing the thrice-repeated struggle for dominion between Rome and Carthage, in the interval between 264 and 146 B. C. The first Punic war (see *Punic*) continued twenty-three years. The fleets and armies of Carthage were vanquished. By the peace (B. C. 241), the Carthaginians lost all their possessions in Sicily. Upon this, the mercenary forces, whose wages could not be paid by the exhausted treasury of the city, took up arms. Hamilcar Barcas conquered them, and restored the Carthaginian power in Africa. Notwithstanding the peace with Carthage, the Romans took possession of Sardinia in 228, where the mercenary troops of Carthage had revolted. Hamilcar, who was at the head of the democratic party, now undertook the conquest of Spain, whose rich mines tempted the Carthaginians. For the success of this enterprise, within seventeen years, Carthage was indebted to the family of Barcas, which could boast of the glorious names of Hamilcar, Asdrubal, and Hannibal. To secure the possession of this acquisition, Asdrubal founded New Carthage (now *Carthagena*), the most powerful of all the Carthaginian colonies. The second Punic war (218—201 B. C.), notwithstanding the abilities of the general, ended with the subjugation of Carthage. Hannibal, neglected by his countrymen, and weakened by a victory that cost him much blood, was obliged to leave Italy, in order to hasten to the assistance of Carthage, which was threatened by the Romans. The battle at Zama, in the neighbourhood of Carthage, resulted in favour of the Romans. Scipio granted the city peace under the severest conditions. Carthage ceded Spain, delivered up all her ships of war except ten, paid 10,000 talents (about £2,250,000), and promised to engage in no war without the consent of the Romans. Besides this, Masinissa, the ally of Rome, and implacable enemy of Carthage, was placed on the Numidian throne. This king, under the protection of Rome, deprived the Carthaginians of the best part of their possessions, and destroyed their trade in the interior of Africa. The third war with the Romans was a desperate contest. The disarmed Carthaginians were obliged to demolish their own walls. Then, taking up arms anew, they fought for death or life. After three years the younger Scipio ended this war by the destruction of the city, B. C. 146. Augustus peopled it anew, and it regained some degree of renown. From A. D. 429 to 534, it was the residence

of the Vandal kings. But the Arabians destroyed it a second time, and few traces now remain of it, except an aqueduct.

The government of Carthage, according to the common opinion, in its origin, was monarchical; afterwards, it is not known how or when, it became republican. The Phœnician states, likewise, had kings, and their government, too, was republican. As no distinct period is mentioned when the government received its form, the constitution seems to have been gradually formed, mostly by and through domestic troubles. The government was composed of the *suffetes*, the senate, the tribunal of the hundred, and the freemen. The *suffetes* were at the head of affairs, and were commonly called *kings*, by the Greek authors, and *consuls* by the Romans. They were permanent officers, and not, like the Roman consuls, chosen for short periods. The Carthaginian senate seems to have been a permanent and numerous body, in which there was a smaller committee, composed, probably, of the elder members. As regards the power of the senate, and its relation to the people, we know that the former had the right of deliberating beforehand on all affairs that were to be referred to the people. If the *suffetes* agreed with the senate, the business might be referred to the people, or not, as these magistrates saw fit; but if they disagreed, it was always referred to the people; and every citizen had the right of expressing his opinions freely. War and peace likewise depended on the decision of the senate. The tribunal of the hundred was chosen from the most respectable families, and was the highest political tribunal. It seems, also, to have been in possession of supreme civil jurisdiction. A highly remarkable peculiarity of the Carthaginian government was the separation of the civil and military power at so early a period. The *suffetes* were never their generals. The latter were chosen by the people, and, in time of war, had unlimited power in regard to military operations. Affairs of state, on the contrary, alliances, and the like, were administered by a committee of the senate, which was associated with the generals. In this respect the Carthaginian constitution was superior to the Roman, in which the union of the two powers cost the state its freedom. The religion of Carthage was a branch of the worship of the stars and of fire, which prevailed in the East. Concerning Moloch (Baal or the Sun), the supreme god of the Phœnicians, the human sacrifices, and other peculiarities of the Phœnician worship, the bishop of Zealand, doctor Frederic Munter, has published the result of his interesting inquiries, in his Religion of the Carthaginians (Copenhagen, 1821, 2d edition, 4to).

CARTHAGENA; an ancient town on the coast of the kingdom of Murcia, with considerable trade, one of the three great naval harbours of Spain, and the best port of the Mediterranean. The basin is very deep, even quite close to the town. The hills that surround it, with steep ascents, and an island at the mouth of the harbour, protect the vessels from all winds. The town, with the citadel, is situated on a peninsula in the harbour. It contains 29,000 inhabitants, fine wharves, a naval arsenal, a naval school, a mathematical, nautical, and pilot academy, an observatory, a botanical garden, a sail-cloth manufactory, has some fisheries, and some trade in barilla, silk, &c. In the neighbourhood of the town the Carthaginians possessed mines of silver of such richness, that Hannibal was enabled to carry on the war against the Romans out of their produce. There are hot springs and salt mines in the neighbourhood. The town was built by the Carthaginian general Asdrubal.

CARTHAGENA; a province of Colombia, forming, with the provinces Santa Martha and Rio Hacha, the department Magdalena (see *Colombia*), bordering on the Carribbean sea and the gulf of Darien. The country is composed of mountains and valleys, covered with large and small forests. The variety of plants and trees, as well as fruits, is wonderful. The earth is covered with perpetual verdure. Wheat and other kinds of European grain do not flourish well, but Indian corn and rice are raised in sufficient quantity for the consumption of the inhabitants. The climate is very hot. From May to December, there is a great deal of rain. The variety and beauty of the birds is remarkable. Poultry, pigeons, partridges, and geese, are good and plentiful. The fruits of the country are pine-apples, papayas, plantains, &c. The principal town is Carthagena.

CARTHAGENA; a city and sea-port of Colombia, capital of the province of the same name; lat. 10° 25′ N.; lon. 77° 30′ W. The population is rated at 24,000. It contains a handsome cathedral, several churches, convents, and monasteries. The city is situated on a sandy island, which forms a narrow passage on the southwest. The bay is one of the best in the country. It extends seven miles from north to south, and has a safe anchorage, though the many shallows at the entrance make a careful steerage necessary. There are among the inhabitants of Carthagena very many of Indian descent. The city, like the whole province, is subjected to the inconvenience of periodical rains.

CARTHUSIANS; a religious order, instituted by St Bruno (q. v.), who, in 1086, built several hermitages in a desert surrounded by hills and rocks, four leagues from Grenoble, and, with six companions, united the ascetic with the monastic life, like the Camaldulians. The inhabitants of this desert built a church, and, by industry and skill, converted into gardens a place which seemed to have been destined for the haunt of wild beasts only. At the same time, they practised the greatest abstinence, wore coarse garments, and eat only vegetables and the coarsest bread. From their original seat (*La Chartreuse*), they were called *Carthusians*, and their monasteries, at first only a few in number, were called *Chartreuses*. Their fifth general, Guigues (died 1137), prescribed, besides the usual monastic vows, eternal silence and solitude. Mechanical labours and copying of books, together with religious worship, constituted their occupation. They observed a strict temperance, and submitted to bleeding five times a-year. In 1170, they were confirmed by the pope. In the following centuries, they received additional statutes, which forbade altogether the eating of flesh, and allowed them to speak only during certain hours on Thursdays and the days on which the chapter met. With increasing wealth, however, many embellishments were added to their solitary life, as the great Chartreuse, near Grenoble, and their elegant palace at Naples, prove. The monks were in general well in formed, hospitable, and remarkable for their neat ness. Excessive penance was interdicted, but their laws were exceedingly severe against disobedience. Their habit was entirely white within, covered with a black mantle. The lay brothers were distinguished by the beard and a shorter scapulary. The Carthusian nuns originated in 1616. They were dressed in white, like the monks, with a black veil. They obtained permission to dine in common, and to interrupt their silence more frequently. The general of the whole order was always the vicar of the Chartreuse at Grenoble. In the middle of the 18th century, the Carthusian monks occupied 172 monasteries, of which 75 were in France, the others mostly in Germany and Italy. The Carthusians in Sicily and Spain only have escaped the general abolition of the order.

CARTILAGE is a semi-pellucid substance, of a milk-white or pearly colour, entering into the composition of several parts of the body. It holds a middle rank, in point of firmness, between bones, or hard parts, and the softer constituents of the human frame. It appears, on a superficial examination, to be homogeneous in its texture; for, when cut, the surface is uniform, and contains no visible cells, cavities, nor pores, but resembles the section of a piece of glue. It possesses a very high degree of elasticity, which property distinguishes it from all other parts of the body. Hence it enters into the composition of parts whose functions require the combination of firmness with pliancy and flexibility, the preservation of a certain external form, with the power of yielding to external force or pressure. Anatomists divide cartilages into two kinds, the *temporary* and the *permanent*. The former are confined to the earlier stages of existence; the latter commonly retain their cartilaginous structure throughout life. The *temporary cartilages* are those in which the bones are formed. All the bones except the teeth are formed in a *nidus* of cartilage. The *permanent cartilages* are of various kinds. They compose the external ear and external aperture of the nostrils and eyelids. The larynx is formed entirely of this substance, and the trachea or windpipe, with its branches, is furnished with cartilaginous hoops, by which these tubes are kept permanently open for the ready passage of air to and from the lungs. The bodies of the vertebræ are joined by large masses of a peculiar substance, partaking of the properties and appearance of cartilage and ligament, which allow of the motions of these parts on each other, without weakening the support that is afforded to the upper parts of the body in general, and to the head in particular, by the vertebral column. These cartilages impart great elasticity to the spine, by which the effects of concussion from jumping, from falls, &c., are weakened and destroyed before they can be propagated to the head. When the body has been long in an erect position, the compression of these cartilages, by the superior parts, diminishes the height of the person. They recover their former length when freed from this pressure. Hence a person is taller when he rises in the morning, than after sustaining the fatigues of the day, and the difference has sometimes amounted to an inch. Cartilages are sometimes interposed between the articular surfaces of bones, where they fill up irregularities that might otherwise impede the motions of the part, and increase the security of the joint by adapting the articular surfaces to each other. These surfaces are, in every instance, covered by a thin crust of cartilage, having its surface most exquisitely polished, by which all friction in the motions of the joint is avoided.

CARTOON has many significations. In painting, it denotes a sketch on thick paper, pasteboard, or other material, which is used as a model for a large picture, especially in fresco, oil, tapestry, and, formerly, in glass and mosaic. In fresco painting, cartoons are particularly useful; because, in this, a quick process is necessary, and a fault cannot easily be corrected. In applying cartoons, the artist commonly traces them through, covering the back of the design with black lead or red chalk; then, laying the picture on the wall, or other matter, he passes lightly over each stroke of the design with a point, which leaves an impression of the colour on the plate or wall; or the outlines of the figures are pricked with a needle, and then, the cartoon being placed against the wall, a bag of coal-dust is drawn over the holes, in order to transfer the outlines to the wall. In fresco painting, the figures were formerly cut out, and fixed firmly on the moist plaster. The painter then traced their contour with a pencil of wood or iron; so that the outlines of the figures appeared on the fresh plaster, with a slight but distinct impression, when the cartoon was taken away. In the manufacture of a certain kind of tapestry, the figures are still cut out, and laid behind or under the woof, by which the artist directs his operations. In this case, the cartoons must be coloured.

The most celebrated cartoons in existence, are those in the royal palace of Hampton Court, which are seven in number, and were executed by Raphael, at the command of pope Leo X., to serve as models for a set of tapestry hangings to be executed at the Gobelines, and presented to king Charles I. They were originally nine in number, but two have been lost. By a singular revolution of events, the tapestry hangings themselves, after having been sold to a Spanish nobleman, at the sale of the effects of the unfortunate king Charles, were purchased by a British consul in Spain, and sent back to this country. The subjects of the cartoons are,—the miraculous Draught of Fishes,—the Sacrifice to Paul at Lystra,—Christ's Charge to Peter,—the Apostle's Healing the Cripple at the Beautiful Gate of the Temple,—the Sorcerer Elymas struck with Blindness,—Death of Ananias,—Paul preaching at Athens,—and of the two in the tapestries, one is the Conversion of St Paul, and the other, our Saviour teaching in the Temple. These drawings have all the usual excellencies which characterize the works of that divine painter. The cartoons have been engraved by several artists, particularly Dorigny, and Holloway, and Gribelin; and copies painted by Sir James Thornhill are suspended in the great room of the Royal Academy, Somerset House.

The cartoon of the school of Athens, carried to Paris by the French, and a fragment of the battle of Maxentius and Constantine, are preserved in the Ambrosian gallery at Milan. There are, likewise, cartoons by Giulio Romano in the Sala Borgia, by Domenichino and other Italian masters, who caused their pictures to be executed, in a great degree, by their scholars, after these cartoons. The value set upon cartoons by the old Italian masters may be seen by Giov. B. Armenini's *Precetti dello Pittura* (Venice, 1687, 4to). In later times, large paintings particularly in fresco, were not executed so frequently. The artists also laboured with less care, and formed their great works more from small sketches. In modern times, some German artists have prepared accurate cartoons. Among them is Cornelius, whose cartoons, for his fresco paintings in Munich, have acquired much celebrity. He prepared, too, a cartoon for the fresco picture representing *Joseph interpreting the Dream*. Overbeck, also, has made cartoons, from which he has painted the *Seven Years of Famine*, and the *Selling of Joseph*. The *Seven Years of Plenty* he executed, with the assistance of William Schadow and Philip Veit. The representations of Joseph's history, just mentioned, the late Prussian consul-general Bertholdy has caused to be executed in fresco, at his residence in Rome, by the above-named artists. For the villa Massimi, near Rome, Overbeck has prepared cartoons representing scenes from Tasso's Jerusalem Delivered; Julius Schnorr, illustrations of Ariosto, and Veit, scenes taken from Dante.

CARTOUCH, in architecture, sculpture, &c., denotes an ornament representing a scroll of paper, being usually in the form of a table, or flat member, with wavings, whereon is some inscription or device. —In heraldry; a name given to a sort of oval shields, much used by the popes and secular princes in Italy, and others, both clergy and laity, for painting or engraving their arms on.—In the military art;

a wooden case, about three inches thick at bottom, and girt round with marline, holding 2, 3, or 400 musket balls, with eight or ten iron balls, weighing one pound each, to be fired from a mortar, gun, or howitzer, for the defence of a pass, retrenchment, &c. It is also used for a cartridge-box, now employed mostly by the cavalry. The charge of a cannon is also sometimes called by this name.—*Cartouche* is likewise the name given by the French literati to that oval ring, or border, which includes, in the Egyptian hieroglyphics, the names of persons of high distinction, as M. Champollion has proved. This border was thought, at first, by Zoega, to include every proper name.

CARTOUCHE, Louis Dominique. The pilfering propensities of this man, who was born at Paris, near the end of the seventeenth century, early showed themselves. Being expelled from school, and afterwards from his father's house, for theft, he joined a band of rogues in Normandy, and then put himself at the head of a numerous company of banditti in Paris, over which he exercised the power of life and death. He was first apprehended in a tavern, in 1721, and brought to the *Châtelet*. On the rack, he named none of his accomplices. But when he arrived at the place of execution, where he was to be broken alive on the wheel, and found that his companions had not assembled to his rescue, he retracted, and named his accomplices, to gain a respite. His execution soon followed. Various authors have described his adventurous, and, in some respects, interesting life.

CARTRIDGE; a case of paper, parchment, or flannel, fitted to the bore of fire-arms, and filled with gun-powder, to expedite the discharge of the piece. Cartridges are of two sorts, viz., *ball*-cartridges, used in firing balls, and *blank*-cartridges, used in firing without ball. Riflemen avoid the use of cartridges, because the cartridge injures the shot of a rifle. In most armies, a soldier carries sixty cartridges into battle.

CARTWRIGHT, Edmund, was born in 1743, in Nottinghamshire (brother of major John Cartwright, the well known advocate of parliamentary reform), and studied at Oxford. His poems were very popular, especially a ballad entitled *Armyne and Elvira*, 1771. He was one of the principal contributors to the Monthly Review. He is also distinguished for his mechanical inventions. In 1786, he took out a patent for a weaving machine; for which he obtained from parliament a grant of £10,000, and was often rewarded with prizes for his inventions. For the last thirty years of his life, he was employed in plans for propelling carriages and boats by steam. He died in 1824.

CARTWRIGHT, John, an English gentleman, celebrated for his exertions in the cause of political reform, was born in 1740, at Marnham, Nottinghamshire, of an ancient family. His early education was rather deficient; but he made some progress in mechanics and practical mathematics. He entered the navy, and became a first lieutenant in 1766. In 1774, his attention was turned to politics. In his Letters on American Independence, written in this year, he advocated a union between the colonies and the mother state, under separate legislatures, and argued this great question on the foundation of natural, inherent right; maintaining "that the liberty of man is not derived from charters, but from God, and that it is original in every one." In 1775, he was appointed major of the Nottinghamshire militia, and, after several ineffectual attempts, on the part of government, to remove him from that post, his dismission was finally accomplished, in 1792, in consequence of an act of parliament. In the American war, lord Howe was desirous of having him with him in America; but major Cartwright, although always eager for promotion in the navy, refused the proposal, alleging that he could not fight in a cause which he disapproved.—From this time, he devoted himself to the two great objects of annual parliaments and universal suffrage. In 1779, he succeeded in the establishment of a Society for Constitutional Information, and was the author of a declaration of Rights, distributed by the society, which, Sir William Jones said, "ought to be written in letters of gold."—The French revolution was warmly welcomed by Cartwright, as by other friends of liberty. The alliance of the sovereigns, which soon followed, he considered equally irreconcilable with policy and with national justice. The subsequent prosecutions against the friends of reform, the fate of Muir and of Holt, occasioned no small dismay among the people. In the trials of Tooke, Hardy, Thelwall and others, Cartwright took a great interest, was present as a witness, and displayed much openness, fearlessness, and firmness. By his writings, public addresses, &c., he continued to promote the work of reform and constitutional liberty; and, as late as 1819, he was tried for conspiracy and sedition, for advising the inhabitants of Birmingham to send what he called their "*legislatorial attorney*" to the house; but he escaped with a fine of £100.—Major Cartwright was not a political reformer only. The plan of making the slave trade piracy, is said to have been first developed in his Letters on the Slave Trade. The information which he furnished to Daines Barrington respecting the possibility of approaching the north pole; his plan for a perpetual supply of English oak for the navy, which has since been partially adopted, and several other useful projects and inventions, are sufficient evidences of his enterprise, activity and diversified knowledge. He died in 1824, in the eighty-fourth year of his age. He has been described as alike just in all the relations of life, as a citizen, a politician, a husband, and a friend; disinterested, firm, and fearless; and Fox, upon presenting one of his petitions to the house, remarked, "He is one, whose enlightened mind and profound constitutional knowledge place him in the highest rank of public characters, and whose purity of principle, and consistency of conduct through life, command the most respectful attention to his opinions." The most prominent traits of his character are, enterprise, firmness, and perseverance. He was a fruitful writer; quick, ingenious, powerful in argument, and sometimes eloquent. His language is plain, pure, and strong.

CARVER, Jonathan, was born in Connecticut, in 1732. He embraced a military career, and, in the French war of 1756, commanded with reputation a company of provincials, in the expedition across the lakes, against Canada. When peace was concluded, in 1763, captain Carver undertook to explore the vast territory which Great Britain had gained. His object was, to acquire a knowledge of the manners, customs, languages, soil, and natural productions of the nations and region beyond the Mississippi, and to ascertain the breadth of the continent by penetrating to the Pacific over its widest part, between N. lat. 43° and 46°. He accordingly set out from Boston in 1766, and, having reached Michillimackinac, the remotest English post, applied to Mr Rogers, the governor, for an assortment of goods, as presents for the Indians dwelling in the parts through which his course was to be directed. Receiving a portion of the supply which he desired, and a promise that the residue should be sent to him at the falls of St Anthony, he continued his journey. But, not obtaining the goods at the appointed place, in consequence

of their having been disposed of elsewhere by those to whom the governor had intrusted them, he found it necessary to return to la Prairie du Chien. He then, in the beginning of the year 1767, directed his steps northward, with a view of finding a communication from the heads of the Mississippi into lake Superior, in order to meet, at the grand portage on the northwest side of that lake, the traders that usually come, about this season, from Michillimackinac, from whom he intended to purchase goods, and then to pursue his journey. He reached lake Superior in good time; but, unfortunately, the traders whom he met there could not furnish him with any goods, as they had barely enough for their own purposes, and, in consequence, he was obliged to return to the place whence he first departed, which he did in October, 1768, after remaining some months on the north and east borders of lake Superior, and exploring the bays and rivers that empty themselves into that body of water. He soon after repaired to England, with the view of publishing his journal and charts, and of obtaining a reimbursement for the expenses which he had incurred. Having undergone a long examination before the lords commissioners of trade and plantations, he received permission to publish his papers; but, when they were nearly ready for the press, an order was issued from the council-board, requiring him to deliver immediately into the plantation-office all his charts and journals. He was, consequently, obliged to re-purchase them, at a great expense, from the bookseller to whom he had disposed of them—a loss for which he received no indemnification, but was forced to be satisfied with that obtained for his other expenses. He had fortunately kept copies of his papers, and he published them ten years afterwards, in Boston, while in the situation of clerk of a lottery. Having sold his name to an historical compilation, which was published in 1779, in folio, entitled *The New Universal Traveller*, containing an account of all the empires, kingdoms, and states in the known world, he was abandoned by those whose duty it was to support him, and died in want of the common necessaries of life, in 1780, aged forty-eight years.—Besides his travels above noticed, captain Carver published a tract on the culture of tobacco.

CARVING, is the art of cutting a hard body by means of a sharp instrument, and is a term generally employed in speaking of figures cut out in wood, in contradistinction to sculpture or figures cut upon metal or stone. One of the most ingenious and useful purposes to which carving has been converted is that of fashioning wood prints or blocks for printing. The wood employed for this purpose is generally the beech, peartree, or boxwood; but any kind of hard wood will answer, although that of the box is preferred, as being of a close grain, and not subject to be preyed upon by the worm. White lead, well ground up, and mixed with water and size, is then to be spread over the smooth surface of the block, and well polished when dry, by rubbing it strongly. The subject to be carved is to be drawn on paper, which is to be pasted on, with strong flour paste, with the face of the drawing towards the block. When it has dried, the paper is to be gently damped with a moist sponge, and the paper rubbed off, leaving the black lines of the drawing upon the white surface of the wood. The wood is then to be cut away, leaving only the black lines standing out in relief. Hugo da Carpi was in the habit of using three blocks, one of which contained the outline, and the two others the shadows and half tints, and in this manner he produced the most exact and faithful imitations of drawings on tinted paper, with the lights heightened with white. Rubens, Titian, Lucas van Leyden, and Albert Durer, and Parmigiana, executed engravings on wooden blocks; and, in our own times, Mr Bewick of Newcastle brought the art to great perfection, and rediscovered some parts of the process which had been lost. It has the advantage of combining great freedom and precision of outline, and can be introduced into type frames, and printed at the same time, so that, as an embellishment for books, it is much cheaper than copperplate engraving, to which, however, it yields both in delicacy and clearness.

CARY, Lucius (viscount Falkland), one of those rare characters who serve as proverbial instances of social excellence, was born about the year 1610. Being carried young into Ireland, he received part of his education at Trinity college, Dublin, and part at St John's college, Cambridge. His youth did not pass without irregularities, but they were suddenly closed by his marriage with a young lady of small fortune, whom he passionately loved. After passing some time abroad, he returned home, and devoted himself to a life of retirement, and the cultivation of polite literature. In 1633, he was appointed one of the gentlemen of the bedchamber to Charles I., but still chiefly resided at his seat at Burford, near Oxford, which he made a kind of academy of learned men, being continually surrounded by the most eminent men of the neighbouring universities. Here it was that Chillingworth composed his famous work against popery; and questions of morals, theology, and literature, were discussed, in a congenial circle, with the utmost freedom. Lord Falkland himself was deeply read in works of controversy; but in him they produced only strictness of principle, and an aspiration after perfection, without debasing the man in the exaltation of the scholar. In 1639, he joined the expedition against Scotland; and, in 1640, his peerage being Scottish, he was chosen member of the house of commons for Newport, in the Isle of Wight. In the first instance, like many of the most honourable characters of the day, he warmly supported parliament. He spoke with severity against Finch and Strafford, and was so disgusted with the proceedings of Laud, that he concurred in the first bill for depriving the bishops of a vote in the house of lords. A strong attachment, however, to established forms, and some doubts of the ultimate objects of the parliamentary leaders, caused him to retract; and he afterwards strongly opposed the same measure. He still, however, kept at a distance from the court; but his high character rendered it so great an object to gain him over to the king's service, that at length he was induced to accept a seat in the council, and the office of secretary of state. While in office, he refused to employ spies or open suspected letters. He very decidedly embraced the party of the king, when hostilities commenced, and attended him at the battle of Edge-hill, and the siege of Gloucester. A view, however, of the evils impending over the country, and, very probably, a conviction of sinister objects on both sides, broke his spirits. He would frequently sit abstracted among his friends, and, sighing deeply, exclaim, "Peace, peace!" and exhibit every sign of grief and anxiety. His closing scene almost proves a determination to die in battle, as he volunteered his services at the battle of Newbury, without a command, and, putting himself in the front rank of lord Byron's regiment, was struck from his horse by a musket-shot, and was found, the next day, dead upon the field.—Such was the fate of lord Falkland, at the age of thirty-four; and while the universal praises which he has received are, doubtless, very much owing to the elaborate character drawn of him by his friend Clarendon, there can be no doubt of the strict integrity of his character and intentions. As a man of active talent, he claims little admiration, and was evidently framed for that life of studious retire-

ment and mental culture in which he so much delighted. One of his sayings marks his taste and character—"I pity unlearned gentlemen on a rainy day." Lord Falkland left behind him several published speeches and pamphlets on political and theological subjects, as also a few poems.

CARYATIDES; a kind of pillars, which represent the upper part of female bodies. The name is of Greek origin. The goddess Diana, who had a temple in Karyatis, a Peloponnesian city, was, for this reason, called *Karyatis*. In honour of her, virgins danced in a festive procession, on the feast of *Karyatis*, which suggested to architects the idea of adopting the image of virgins in a kind of column which ornamented the Pantheon. Thus Lessing explains the name and form of the Caryatides. Another explanation of the origin of Caryatides is the following: The inhabitants of Carya, a city of Peloponnesus, allied themselves with the barbarians in the Persian war. The Greeks, on the successful termination of that struggle, exterminated the males of Carya, and reduced all the women to slavery. The captives, as a farther mark of infamy, were forbidden to lay aside the robes in which they had decorated the conquerors' triumph; and the architects of the time, to perpetuate the memory of the transaction, made statues representing these women in the servile office of supporting entablatures.—For representations of Caryatides, see plate VI. fig. 7.

CASA, Giovanni della, an Italian poet and orator, of an ancient and noble family of Mugello, near Florence, was born 1503, studied at Bologna, Padua, Rome, and entered as an ecclesiastic, into the service of the two cardinals Alessandro Farnese, the first of whom, in 1534, ascended the papal chair, under the name of *Paul III.* He rose through various offices in the church, till Paul IV. made him his private secretary. He died probably in 1556. His most celebrated work is *Galateo, ovvero de' Costumi*, to which one, *Degli uffizj, Communi tra gli Amici Superiori e Inferiori*, forms a supplement. This last is a translation of his Latin treatise, *De Officiis inter Potentiores et Tenuiores Amicos.* The best and most complete edition of his works appeared at Venice, 1752, in 3 vols. 4to.

CASANOVA, Francis, a painter famous for his battle-pieces, born at London, 1730, went, while a boy, to Venice, where he applied himself to the art of painting. He afterwards obtained admission into the academy in Dresden, and painted several pieces for the prince of Condè. The spirit and liveliness of his colouring and execution cannot be surpassed. At the request of Catharine of Russia, he painted, in Vienna, a piece representing the victory of this princess over the Turks, which she afterwards put up in her palace. He was constantly occupied with his art, and died at Bruhl, near Vienna, 1805.—His brother John, likewise a painter, was born, 1729, at London; died, 1795, at Dresden, where he was professor and superintendent in the academy of painting, and had instructed many able pupils in his art. His work on the Ancient Monuments of Art, published in Italian, and also in German (Leipsic, 1771), is still in esteem.

CASANOVA, John James, de Seingalt; eldest brother of the preceding; born at Venice, 1725; known by his Memoirs as an original and gay tempered man, who acted an interesting part in all situations, amongst all classes of society, and in all the large cities of Europe. His various adventures are related by himself in a most entertaining manner. They were first published, in part, at Leipsic, 1826, in a German translation. The French original has since appeared. His father, Cajetan John James, a descendent of the Spanish family of Palafox, falling in love with a dancer, turned actor, but afterwards united himself with the daughter of a shoemaker, Fanosi, who followed the profession of her husband. James Casanova, their eldest son, received the rudiments of his education in Padua, and made rapid progress in the Latin language, as well as in the other branches of learning. His ardent temperament, early developed, soon, however, involved him in many adventures that served to sharpen his observation and enlarge his knowledge of human nature. He studied law, and, in his sixteenth year, wrote two dissertations; one, *De Testamentis*, the other on the question, *Utrum Hebræi possint construere novas Synagogas.* His talent for shining in society introduced him, at Venice, into the select circles, in which a refined but frivolous tone of manners prevailed. The patriarch of Venice gave him the inferior ordination, and his first sermon was received with general applause; but he failed in his second; and from this period commences his restless career, in which he became entangled in a series of love adventures, that can be understood only from his memoirs. He is arrested in Venice, comes into personal contact with pope Benedict XIV. at Rome, goes to Constantinople, is in the military service at Corfu, and, in short, visits all the principal cities of Europe, being continually connected with the highest personages, is followed and caressed, till at last he accompanies the count of Waldstein to Dux, in Bohemia, where he becomes his librarian. He died at Vienna in 1803. The escape of Casanova from the lead prisons of Venice was managed with admirable address and ingenuity. He has left several works in Italian and French, which give proof of the great powers of this Proteus, though he was more at home in the bustling world than in the pursuits of learning. Of these may be mentioned, *Confutazione della Storia del Goberno Veneto d'Amelot de la Houssaie, divisi in tre Parti* (Amsterdam, 1769); *Istoria delle Turbulenze della Polonia dalla Morte di Elisabet Petrowna fino alla pace fra la Russia e la Porta Ottomana, in cui si trovano tutti gli Avenimenti Cagioni della Rivoluzione di quel Regno* (Gratz, 1774, 3 vols.); *Histoire de ma Fuite des Prisons de la Republique de Venise, qu' on uppelle les Plombs* (Prague, 1788). His memoirs are a mirror of the manners of his time.

CASAS, Bartholomew de las, a Spanish prelate, was born at Seville in 1474, and in his nineteenth year, accompanied his father, who sailed with Columbus, to the West Indies. Five years afterwards, he returned to Spain, and, pursuing his studies, he entered the ecclesiastical order. He again accompanied Columbus in his second voyage to Hispaniola, and, on the conquest of Cuba, settled there, and distinguished himself by his humane conduct towards the oppressed natives, of whom he became, in a manner, the patron. He set at liberty the Indians who had fallen to his share in the division; and, so much was he interested for them, that, in 1516, he went to Spain to lay a statement of their case before king Ferdinand, whose death, at that time, prevented any measures for their redress. The regent, cardinal Ximeñes, however, appointed a commission to examine circumstances upon the spot, and to determine accordingly. Las Casas was to accompany them, with the title of *protector of the Indians.* The commissioners found that it was impossible to liberate the Indians, and therefore endeavoured to secure them humane treatment; but Las Casas, still dissatisfied, remonstrated so warmly, that he was obliged to take refuge in a convent, from the rage of the planters. He again returned to Europe, and, on the accession of Charles V., in consequence of his representations, the council appointed a chief judge to re-examine the points of controversy between the partisans of Indian liberty and the colo-

nists. Las Casas, by a singular inconsistency, in his zeal for the Indians, became the author of the slave trade, by proposing to purchase Negroes from the Portuguese in Africa, to supply the planters with labourers, of the want of whom they complained; and this was unfortunately put into execution. He next applied for a grant of an unoccupied tract, in order to try his own plan with a new colony. This he at length obtained, and, with 200 persons, whom he persuaded to accompany him, landed at Porto Rico in 1521, but found that an expedition was advancing to ravage this very tract, and convey its inhabitants to Hispaniola as slaves. He endeavoured in vain to prevent the threatened danger, and, with the few who still adhered to him, returned to Hispaniola to solicit succour. During his absence, the natives attacked the colonists with such success, that, in a short time, not a Spaniard remained in that part of South America. Las Casas, in despair at the failure of his project, retired to the Dominican convent at St Domingo, and assumed the habit of the order. Notwithstanding his retirement, his zeal in the cause of the Indians did not abate; and, being sent on a mission to Spain, by a chapter of his order at Chiapa, in 1542, he pleaded their cause with his pristine warmth, and composed his famous treatise *Brevissima Relacion de la Destruccion des Indes*, in which he exposed the cruelties practised by the Spaniards. His unremitting perseverance at length obtained a new set of laws and regulations, by which the natives were greatly relieved. In 1544, he returned to America as bishop of Chiapa, and continued there until 1551, when he resigned his bishopric, and again returned to Spain. He died at Madrid 1556, in the ninety-second year of his age. Besides the treatise abovenamed, he was also the author of a treatise in Latin, on the question—"Whether sovereigns may in conscience, by virtue of any right, alienate their subjects from their crown, and transfer them to the dominion of any other lord?" which difficult question he treats with great freedom, spirit, and delicacy. He also composed several works which have never been published, among which is a General History of the Indies, which was a great assistance to Antonio de Herrera in his history. All his works evince profound learning, and solid judgment and piety; and, notwithstanding his great inconsistency in regard to the Negroes, he must be regarded as a very benevolent man, and a lover of mankind.

CASAUBON, Isaac de (commonly called *Casaubonus*), born Feb. 18, 1559, at Geneva, of a family from Dauphiny, was educated by his father, a clergyman. In his ninth year, he spoke Latin fluently. In his nineteenth year, he entered the university at Geneva, where he studied jurisprudence, theology, and the Oriental languages, and in 1582, succeeded Portus as professor of the Greek language. He here married the daughter of Henry Stephens, and published, every year, editions of Greek and Latin authors, with critical notes and translations. In 1596, he accepted a professorship of Greek and belles-lettres at Montpellier, but held it only two years. Henry IV. invited him to Paris. His religious principles (the same as those for which his father had left his country), the jealousy of the other professors, and perhaps his rather unyielding character, were the occasion of many unpleasant occurrences, for which, however, he was indemnified by the office of royal librarian. After the death of Henry IV., he followed Sir Henry Wotton, envoy extraordinary from James I., to England, where he was received with distinction, had two benefices and a pension conferred on him, and died at London, July 1, 1614. He was buried in Westminster abbey. Casaubon was a liberal theologian, a man of extensive learning, a good translator, and an excellent critic. As a critic, he has commented on Diogenes Laertius, Aristotle, Theophrastus, Suetonius, Persius, Polybius, Theocritus, Strabo, Dionysius of Halicarnassus, Athenæus, Pliny the Younger, &c. Nearly all the ancient classics are indebted to his valuable researches. His profound dissertation on the satirical poetry of the Greeks and the satire of the Romans (*De Satyrica Græcorum Poësi et Romanorum Satyra*) deserves particular praise. His theological writings are of less value.

CASAUBON, Meric, son of the preceding, born at Geneva, 1599, likewise distinguished himself by his learning. He followed his father to England, and was made doctor of divinity at Oxford. He filled successively several offices in the church, when the revolution, which brought Charles I. to the scaffold, deprived him of his income. Still he rejected the proposal of Cromwell to write the history of his time, as also the invitation of queen Christina to live in Sweden. On the return of the Stuarts, he was rewarded for his loyalty by restoration to his office in the church, which he held till his death, 1671. His learning was various and extensive, but not so profound as his father's. He published, besides his theological works, observations on several classic authors; e. g., Terence, Epictetus, Florus, Polybius, &c.

CASCO BAY; a bay in Maine, between cape Elizabeth on W. S. W. and cape Small Point on E. N. E. Within these capes, which are about 20 miles apart, there are about 300 small islands; most of which are cultivated, and are much more productive than the main land on the coast of Maine. Portland harbour is on the W. side of the bay.

CASE, ACTION UPON THE. *Actio super causam* is a general action, given for the redress of a wrong done any man without force, and not especially provided for by law, in order to have satisfaction for damage. This is called an *action on the case*, because the whole cause or case is set down in the writ; and there is no other action given in the case, except where the plaintiff has his choice to bring this or another action. This action lies in a variety of instances; as for words spoken or written, which affect a person's life, reputation, office, or trade, or tend to his loss of preferment in marriage or service, or to his disinheritance, or which occasion him any particular damage. Action on the case likewise lies upon an assumpsit (q. v.). It lies, also, in all instances wherein no general action could be framed; e. g., against carriers; against a common innkeeper, for goods stolen in his house; for deceit in contracts, bargains, and sales; for neglect or malfeasance; for injuries done in commons; for malicious prosecution and false arrests; against sheriffs, for default in executing writs, permitting escapes, &c.; for conspiracy, nuisances, &c. &c.

CASE, in grammar. See *Language*.

CASE-HARDENING is a process by which iron is superficially converted into steel, in such articles as require the toughness of the former, conjointly with the hardness of the latter substance. The articles intended for case-hardening are first manufactured in iron, and are then placed in an iron box, with vegetable or animal coals in powder, to undergo cementation. Immersion of the heated pieces into water hardens the surface, which is afterwards polished. Coarse files and gun-barrels are among the articles most commonly case-hardened.

CASEMATES (from the Spanish *casa*, a house and *matare*, to kill), in fortification; vaults which are proof against bombs, under the main wall, particularly in bastions, for the purpose of defending the moat of a fortification, also for making countermines.

They serve, at the same time, as a place for keeping the heavy ordnance, and, in case of necessity, as habitations for the garrison.

CASE-SHOT, in artillery, is formed by putting a quantity of small iron balls into a cylindrical tin box, called a *canister*, that just fits the bore of the gun. In case of necessity, the canister is filled with broken pieces of iron, nails, stones, &c. The case is closed at both ends by wood. Shot of this sort is thrown from cannons and howitzers. In sieges, sometimes, instead of cases, bags are used. This kind of shot is very injurious to the enemy, because the balls contained in the canister spread, diverging in proportion to the distance. The amount of divergence is, to the distance which the shot reaches, generally in the proportion of 1 to 10; thus, at the distance of 600 paces, they make a circle of 60 paces diameter. The canisters used in the Prussian army contain balls of 1, 1½, 3, 4, 6, 8, and 12 ounces and of 1 pound. The distance which the shot will reach varies according to the weight and number of the balls. A six-pounder shoots canister balls of 1 ounce from 200 to 500 paces; twelve and twenty-four-pounders shoot balls of 1 pound 800 to 1000 paces. The number of the balls varies according to their weight.

CASHMERE, in Hindostan, now a province of the Afghan state of Cabul, in Asia, is a very celebrated valley, surrounded by the gigantic mountains of Asia, the Himalaya and Hindoo Koh, and traversed by the river Behat or Chelum (formerly *Hydaspes*). It embraces about 17,291 square miles, and contains about 2,000,000 inhabitants. From three sides, seven passes only lead to this region; to the east, the Himalaya presents an insurmountable barrier of snow. The splendour and sublimity of the diadem of snow-capped mountains, the beauty and richness of the hills, which form the ascent to the higher peaks, it is impossible to describe. The elevated situation of the valley, and the mountains of snow which surround it, render the climate rather cold; but it is, on the whole, moderate and mild. This region, so rich in romantic scenery, is watered by numerous streams, and is blessed with an abundance of the finest productions. The Asiatics, therefore, call it the *paradise of India*, the *flower-garden*, and the *garden of eternal spring*. The hills are covered with forests and Alpine pastures; at the foot of these are fields of corn; along the sides of the rivers, rice is planted; rich orchards extend over the foremost range of hills; mulberry trees are cultivated in abundance, for the support of silk-worms, and are entwined with vines, from whose grapes wine, very similar to Madeira, is prepared. The fruits of warm climates do not ripen here. The valley is famous for its flowers, with which all the gardens and meadows abound. Violets, roses, narcissuses, and innumerable European flowers, besides many that are not known in Europe, grow wild. The inhabitants are Hindoos, of the religion of Brama, although they are under the dominion of the Afghans, who profess the Mohammedan religion. Their language is a dialect of the Sanscrit. They manufacture their celebrated shawls in great perfection. The wool which they use for this purpose comes from Thibet and Tartary, in which countries, only, the goat, from which it is taken, is said to thrive. About 80,000 shawls are made yearly, in 16,000 looms, each of which employs three workmen. The capital, Cashmere (likewise *Serinagur*), the largest town in the whole empire of Afghanistan, is situated on the Behat, and contains 200,000 inhabitants.

Cashmere Goat, a nobler species of the common goat, is descended from the goat of Thibet, which pastures on the Himalaya. The climate in Thibet is subject to sudden changes. There is little rain, but much snow, as the cold in winter is below the freezing point. Thibet is situated at the northern descent of the Himalaya mountains, and Cashmere at the southern; hence the latter is a little warmer than Thibet. In Thibet, this goat is a domestic animal. It is not allowed a very luxuriant pasture. The favourite food of these animals is buds, aromatic plants, rue, and heath. The people of Thibet give their goats, at least once a-week, some salt, which has always proved a useful accompaniment to the customary food of these animals. If they are transferred from their cold, mountainous abode into a warmer country, the natural consequence follows, that the wool becomes inferior in quantity and fineness. It grows, also, very slowly in the warm part of the year, and more vigorously as the cold season approaches. The head of the Asiatic goat is large, the horns situated backwards, and somewhat curved, the legs slender. The colder the region where the animal pastures, the heavier is its fleece. Proper food and careful tending increase the fineness of the wool. Yearlings, as in the case with the Merino sheep, afford the finest wool. A full-grown goat yields not more than eight ounces. The goats which pasture in the highest vales of Thibet have a bright ocher colour. In lower grounds, the colour becomes of a yellowish-white, and, still farther downwards, entirely white. The highest mountains of the Himalaya, inhabitable by man, contain also a kind of goats with black wool, which, in India, and in the mountainous country of the goats, obtains the highest price, as a material for shawls. The goats of Thibet and Cashmere have the fine curled wool close to the skin, just as the under-hair of our common goat lies below the coarse upper-hair. The wool is shorn in the spring, shortly before the warm season—the time when the animal, in its natural state, seeks thorns and hedges in order to free itself from the burden of its warm covering. All the hard and long hairs are picked out most carefully. The wool, thus purified, is washed, first in a warm solution of potash, and afterwards in cold water, in which process felting must be carefully avoided. It is then bleached upon the grass, and carded for spinning. The shawl-wool is three times dyed—before carding, after spinning, and in the shawl. The Asiatics avoid spinning the wool hard, in order that the shawl may be soft. They use a spindle, which consists of a ball of clay, with an iron wire attached. The finger and the thumb of the spinner are kept smooth by steatite powder. A large shawl, of the finest quality, requires 5 pounds of the wool; one of inferior quality, from 3 to 4 pounds. Main, in London, has invented a machine, which spins this wool, in a very simple way, finer than can be done by the best spindles of Thibet, and, at the same time, of a firmer thread. The flesh of the Cashmere goat tastes as well as that of the common one; and its milk is as rich, if it is well tended. Since 1820, this species has been introduced into France, and succeeds very well. The enterprising baron Ternaux (q. v.) ordered 1289 of these goats to be brought to France (1820), under the care of the celebrated professor of Oriental languages in Paris, Amadée Joubert. Joubert found these goats already spread from Cashmere to the Ural, over Bucharia, in Independent Tartary, purchased them in the deserts there, and transported them over the Volga along the coast to Theodosia, in the Crimea, where they were put on board vessels to be carried to France. On the voyage, which lasted a long time, a great number died: there remained, however, more than 400 healthy animals, which were sent from Toulon and Marseilles, partly to the Pyrenees of Roussillon, partly to the lime-hills of Provence, and to the pastures of Alsatia and Rambouillet.

CASHNA, or CASSINA, or KASSINA; a city in Africa, capital of a kingdom, between Bornou and Timbuctoo; 220 miles W.N.W. Bornou, 690 E.S.E. Timbuctoo; lon. 11° 34′ E.; lat. 16° 30′ N. A large proportion of the country of Cashna consists of land of great fertility, interspersed with arid wastes. Cashna is level, and said to contain 1000 towns and villages. The monarch is called *sultan of all Soudan*, i. e. Negroland. The principal articles of traffic are senna, gold dust, slaves, cotton cloths, goat skins, ox and buffalo hides, and civet. Cashna has no salt lakes or mines, but is supplied with salt from Bornou.

CASHOO; the common name of the *anacardium occidentale* of Lin.; a native of Bahar. The fruit of the tree is called *cashoo-nut*. The expressed juice makes a pleasant wine; and an aromatic and medicinal drug is prepared by a decoction and maceration of several parts of the tree, afterwards consolidated by evaporation. The Indians chew it. The Europeans employ it as a digestive, and a soother of coughs.

CASIMIR III. the Great, king of Poland, son of Uladislaus Loketek, distinguished himself by his valour, under the reign of his father, who had commissioned him to take revenge on the knights of the Teutonic order; and, that he might learn the art of governing, made him regent of Great Poland. In 1333 he ascended the throne, and had many contests with the Teutonic knights, made himself master of Little Russia, which had formerly belonged to Poland, conquered Silesia, repelled the Tartars, who had advanced to Poland, and the Bohemians, who attempted to gain possession of Silesia, as a fief of Bohemia. He died in 1370, without children, having named a son of the king of Hungary his successor, in 1339. He caused a new code of laws to be compiled, and protected the peasants with much energy, on which account he was called the *peasants' king*. He had a great number of mistresses, among whom was a Jewess, named *Esther*, who procured for her nation those liberties which they enjoy in Poland to the present day. With Casimir, the line of the Piasti, which had ruled in Poland for 523 years, became extinct. From that time, the Poles chose foreigners for their kings, and thus laid the foundation of the troubles which distracted the kingdom till its final ruin.

CASINO, in Germany, is used to signify a club-house. They are now to be found in almost every place of middling population.

CASIRI, Michael, a learned Orientalist and Syro-Maronite clergyman, was born at Tripoli, in Syria, 1710, came to Rome, where he studied in the college of St Peter and St Marcellino, and, in 1734, entered the clerical profession. The following year, he accompanied the learned Assemanni to Syria, where he was going, at the command of the pope, to attend the synod of the Maronites, and, in 1738, gave, at Rome, an exact account of the religious tenets of the Maronites. He afterwards taught, in his monastery, the Arabic, Syrian, and Chaldee languages, theology and philosophy; and, in the year 1748, was invited to Madrid, where he was appointed to an office in the royal library. In 1749, he devoted his attention, by the king's orders, to the library of the Escurial, of which he subsequently became the superintendent. Here he collected the materials for his celebrated work, *Bibliotheca Arabico-Hispana* (Madrid, 1760—70, 2 vols., folio), which enumerates, in 1851 articles, the manuscripts of the Escurial library, perhaps the richest in Europe in Arabic manuscripts. This work, though not entirely free from errors, contains very important information and valuable extracts, and is indispensable to every Orientalist. Casiri died at Madrid in 1791.

CASPIAN SEA; a large lake or inland sea, in Asia; bounded N. by Russia, E. by Tartary and Persia, S. by Persia, and W. by Persia, Circassia, and Russia; 646 miles in length from N. to S., and from 100 to 265 in breadth; supposed to be the largest lake in the eastern part of the globe. The water is less salt than that of the ocean, of a bitter taste, and of an ocher colour, without ebb or flow. In some places it is exceedingly deep, yet it abounds in shallows, so as to prevent the navigation of ships which draw more than nine or ten feet of water. Among the rivers which flow into it are the Volga, Ural, and Kur. It has no outlet. The fisheries here, which are very valuable, occupy and train many seamen. The coasts are divided among the Russians, Persians, and Tartars. The Caspian sea was, by the ancients, called the *Hyrcanian sea*; the Tartars call it *Akdingis*, i. e. the *White sea*; the Georgians call it the *Kurtshensian sea*; and by the Persians it is styled *Gursen*. The level of the Caspian sea is 375 feet lower than that of the ocean. The Truchmenes, on the shores of the Caspian sea, assert, that the lake Kuli-Daria, which is connected with the gulf of Karabogaskoi, a part of the Caspian sea, contains a whirlpool, which takes in the water of the latter. In fact, the current from the Caspian sea into the gulf of Karabogaskoi is very great. The most recent information respecting the shores of the Caspian sea is that given by Murawiew in his Journey to Khiwa, in the year 1819, in Russian.

CASSANDER, George, born in 1515, in the island of Cadsand, or Cassand, near Bruges, in the Netherlands, from which he received his name, is celebrated for his endeavours to settle the differences between religious parties. At Bruges, Ghent, and Cologne, he studied, and afterwards taught philology, the canon law, and Catholic theology, but accepted no public office, on account of his ill health. In 1561 he published a work designed to allay religious disputes, in which his censure of Calvin for violence and intolerance, drew upon him the attacks both of Calvin and Beza. In 1564, he was employed by the duke of Cleves to convert the Anabaptists. The emperor Ferdinand I. invited him to Vienna, to compose articles of union between the Catholics and Protestants. These he published, under Maximilian II., the successor of Ferdinand—*De Articulis Religionis inter Catholicos et Protestantes Controversis ad Impp. Ferd. I., et Max. II., Consultatio, ed. Hug. Grot.* (1642.) Though a sincere Catholic, he founded his opinions on the doctrines of the old Christian fathers, and showed his concurrence with the Protestants, in regard to fundamental doctrines, by proposing communion under both forms, the marriage of priests, the abolition of image-worship, the reform of many abuses, and a modification of the Catholic system. But he asserted the supremacy of the pope, supported the doctrine of transubstantiation, and the importance of the sacrament, *ex opere operato*. His proposals were not relished by the zealots of either party. He died at Cologne, in 1566, with the reputation of a learned and liberal theologian.

CASSANDRA, also ALEXANDRA; daughter of Priam and Hecuba, and twin-sister of Helenus. Both children, according to tradition, were playing in the vestibule of the temple of the Thymbræan Apollo, not far from Ilium; and, having staid there too late to be carried home, a couch of laurel twigs was prepared for them, for the night, in the temple. When the nurses went to them the next morning, they found two serpents at the side of the children, which, instead of injuring them, harmlessly licked their ears. This miracle produced a still greater one; the hearing of the children was rendered so acute, that they could distinguish the voices of the

gods. Cassandra subsequently spent much of her time in the temple of Apollo, who, becoming enamoured of her charms, disclosed to her all the secrets of the prophetic art, and, in return, demanded her love. But Cassandra, when her curiosity was satisfied, refused the dishonourable reward. Apollo, incensed at this, put a curse on her prophecies, that they should never find belief. She frequently and continually foretold the destruction of Troy, and warned her countrymen in vain against the deceitful horse. When Troy was conquered, and Cassandra, with the other maidens, fled to the temple of Minerva, Ajax tore her from the altar, deflowered the virgin in the sacred place, and dragged her away to the other female slaves, with her hands tied. On the division of the booty, she fell to Agamemnon, who carried her, as his slave and mistress, to Mycene. Clytemnestra murdered them both. Agamemnon had twins by her—Teledamus and Pelops. The ancients regarded this rape of Cassandra as a most infamous atrocity. It has often afforded a subject to poets and sculptors. The Locrians, the countrymen of Ajax, were afflicted, on this account, for many years, with storms, and their country was desolated with the plague.

CASSATION; a term used in the courts on the continent of Europe. It is derived from the middle ages, and signifies the annulling of any act or decision, if the forms prescribed by law have been neglected, or if any thing is contained in it contrary to law.

Cassation, Court of (*Cour de Cassation*); one of the most important institutions of modern France, which gives to the whole jurisdiction of that country coherency and uniformity, without endangering the necessary independence of the courts. It was established by the first national assembly, and has been preserved, in every essential respect, under all the changes of the revolution and restoration. It has been maintained even in those districts which, by their union with France, became subjected to French laws, but, by the peace of Paris, have become part of the Prussian monarchy. In France, as early as the reign of Louis IX. (1226—1272), petitions were presented to the king by appellants from the decisions of the courts. In later times, appeals to the parliaments, as the highest courts of the kingdom, came into use, and their decisions were not liable to be set aside by the ordinary forms of law. Yet the parties were allowed to dispute even these decisions, if they were founded upon errors of fact, or violated undisputed principles of law; and, by an ordinance of 1302, it was provided, that the parties should be allowed royal letters for the defence of their rights against the decisions of the supreme courts (*lettres de grâce de dire contre les arrets*), which should be issued from the chancery (by the chancellor of France). The case was then sent back to the parliament for further investigation, but was examined and decided in the presence of the king himself, or of a special commissioner. An abuse, however, crept in, of transferring these cases to the royal council, where they were decided by officers called *maîtres des requetes*. These letters received the name of *lettres de proposition d'erreur*, and, during the civil commotions at the end of the fourteenth century, began to be more frequently presented to the council, which, as soon as one party complained of the partiality of the parliaments, transferred the case to its own bar, and obstructed the course of justice by *lettres d'état* (suspensions of the process, on the pretext of the absence of one of the parties in the service of the king). Under the chancellor Poyet (1538—1542), this abuse reached its highest pitch; but the chancellors Olivier (1545—1551) and Hopital (1560—1568) the two great reformers of French jurisprudence, limited the use of these *lettres*, till, by the ordinance of Blois (1576), all the provisions against the decisions of the parliaments were reduced to these three:—the *proposition d'erreur*, for an error of fact; *requête civile*, to restore the parties to their former condition, on account of the fraud of one of the parties, or the mistakes of the attorney; and *cassation* (petition for abrogation), for violation of forms or settled principles of law. By the famous order of procedure of 1667, the first of these provisions was abolished, but the province of the *requête civile* and *cassation* was enlarged, and more precisely defined. The former was always brought before the court itself, and decided there, the latter before the council. For this purpose in the *conseil privé*, or *cons. des parties*, a particular committee was formed, consisting of the chancellor, the four secretaries of state (ministers of the departments), the council of state, and all the *maîtres des requêtes* (in 1789, seventy-eight in number). The decisions of this committee were too much influenced by the will of the king and the ministers, and by various other circumstances, so that they did not enjoy great respect, though they often exposed acts of great injustice on the part of the parliament, and other high courts. It was therefore abolished in the first national assembly, and its place supplied by an independent court—the *tribunal of cassation* (law of Nov. 27, 1790), which was retained in all the constitutions, and received, under the imperial government, (1804), the name *court of cassation*, which it still retains. It consisted, according to the organization of 1800, of forty-eight members, chosen from the senate, on the nomination of the consuls, who elected their own president from among themselves. The appointment of president was afterwards vested in the emperor. In the *Charte Constitutionnelle* of 1814, the right of appointing the counsellors was vested in the king; but they are not removable. The minister of justice, or keeper of the seals (*garde des sceaux*) has the right of presiding when the tribunal exercises its right of censorship over the *cours royales:* it has, besides, a first president and three presidents of sections. This court never decides on the main question at issue, but on the competency of the other courts, and on the petitions to have their decisions reviewed or annulled, and assigns the question to another court, if a decision is to be set aside for an evident violation of the forms or the principles of the law. For this purpose it is divided into three sections:—the *section des requêtes*, which decides on the admissibility of the petitions in civil cases; the *section de cassation civile;* and the *section de cassation criminelle*. After a decision has been reversed, if a second court decides the same case in the same way, and an appeal is entered again, the court of cassation must either request an authentic explanation of the law from the government, or, at least, all the three sections must unite, to pronounce a second reversal, or cassation; and if a third decision is the same as the preceding, a repeated petition for a reversal makes the authentic explanation indispensably necessary. The sentences of the court of cassation are not only recorded in the journals of the courts, the decisions of which are reversed, but published likewise in an official bulletin, by which consistency and uniformity are preserved. The tribunal of cassation has enjoyed, from its commencement, the respect and confidence of France, and numbers among its members several of the most distinguished lawyers; as the president Henrion de Pansey, the counsellors Chabot, Merlin, and Carnot.

For the Prussian province on the Rhine (the districts of Cleves, Dusseldorf, Coblentz, Aix-la-Chapelle, Treves, and Cologne), by the ordinance of

June 21, 1819, a court of revision and cassation was established at Berlin (consisting of a president and sixteen judges, among whom is professor Savigny), which has under it the court of appeal at Dusseldorf (consisting of a president, together with thirty-two other officers), and six district courts (the former resembling the French royal courts, the latter the French tribunals of original jurisdiction). See *Appeal; Writs of Error*, and *Courts*.

CASSAVA, or CASSADA. The cassava or cassada (*jatropha manihot*) is a South American shrub, about three feet in height, with broad, shining, and somewhat hand-shaped leaves, and beautiful white and rose-coloured flowers. It is a very remarkable circumstance, that the roots of the cassava, if eaten raw, are a fatal poison, both to man and beast, and that, when prepared by heat, they yield a safe and valuable food; on which, indeed, many both of the Indian and European inhabitants of South America, almost wholly subsist. The roots are the only edible parts of the plant. These are white, soft, and farinaceous, from one to two feet in length, and five or six inches in circumference. They are dug out of the earth, washed, stripped of their rind, and ground to a pulp. The juice, or poisonous part, is carefully pressed out, and thrown away; since cattle and other animals, which have accidentally drank of it, have almost instantly died. The flour that remains after pressure, is formed into thin, round cakes, and baked. To a European, accustomed to eat bread, these, though sweetish and not unpalatable, have an insipid taste. If placed in close vessels, and preserved from the attacks of insects, cassava bread may be kept for several months without injury. With the natives of South America, it is not unusual to throw a great number of cakes of cassava together to heat; after which they soak them in water, which causes a rapid fermentation to take place; and, from the liquor thus obtained, they make a very sharp and disagreeable, but intoxicating beverage, which will not keep longer than twenty-four hours without spoiling. From the pure flour of cassava is formed the substance called *tapioca*, which is frequently used for jelly, puddings, and other culinary purposes. This is separated from the fibrous part of the roots by taking a small quantity of the pulp, after the juice is extracted, and working it in the hand till a thick, white cream appears on the surface. This, being scraped off and washed in water, gradually subsides to the bottom. After the water is poured off, the remaining moisture is dissipated by a slow fire, the substance being constantly stirred, until, at length, it forms into grains about the size of sago. These become hard by keeping, and are the purest and most wholesome part of the cassava.—The roots of another species of this shrub, called *sweet cassava*, are usually eaten with butter, after being roasted in hot ashes. They have much the flavour of chestnuts, and are an agreeable and nutritive food.

CASSEL, the residence of the elector of Hesse Cassel, lies on the Fulda; lat. 51° 19′ 20″ N.; lon. 9° 35′ 18″ E.; and has 1586 houses and 23,300 inhabitants, among whom are 500 Jews. One part of the city is quite regular. The river Fulda is navigable at this place. The situation renders the climate pure and healthy. It has nineteen squares, nine churches, and many public buildings, containing highly valuable libraries, collections of works of art, &c. The gallery of paintings contains some famous masterpieces. An observatory is likewise situated here. The city was much embellished under the government of Jerome, king of Westphalia, whose capital it was till the dissolution of this kingdom, in October, 1813. The old elector again took possession of it, Nov. 21, 1813. About a league distant is the summer palace, called *Wilhelmshohe*. Cassel has considerable manufactories.

CASSEL (Hesse-Cassel). See *Hesse*.

CASSIA. Wild cinnamon, or cassia, is the bark of a tree of the bay tribe (*laurus cassia*), which grows in the East Indies and China, and is distinguished by having spear-shaped leaves, each with three nerves. This bark was well known to the ancients, and highly esteemed by them. But since the use of cinnamon has been generally adopted, the cassia bark has fallen into disrepute, on account of its inferiority. It is thicker and more coarse than cinnamon, of weaker quality, and abounds more with a viscid, mucilaginous matter. For many purposes, cassia, as being much less expensive, is substituted for cinnamon, but more particularly for the preparation of what is called *oil of cinnamon*; and nearly the whole of what is at present sold under the name either of *simple* or *spirituous cinnamon waters*, is prepared from cassia. The buds as well as the bark of this tree are used in cooking, &c. Cassia is imported mostly from China.

CASSINA. See *Cashna*.

CASSINI; a name famous in the history of astronomy and geography for three generations.

1. *Giovanni Domenico*, born July 8, 1625, at Perinaldo, near Nice, studied at Genoa with the Jesuits. Chance turned his attention to astronomy, in which he made such rapid progress, that, in 1650, the senate of Bologna bestowed on him the first professorship of astronomy at the university. A meridian had been drawn by Ignatio Dante (1575), in the church of St Petronia, in that city. In 1653, Cassini conceived the idea of extending and correcting it. In two years he completed this difficult task, the first fruits of which were more correct tables of the sun, a more precise determination of its parallax, and an excellent table of refractions. By an observation at Città della Piave, he discovered the shadows cast by the satellites of Jupiter on the disk of that planet, when they are between it and the sun. By means of these, he corrected his theory of the motion of the satellites, and determined the period of Jupiter's revolution. At the same time, he made a number of observations on insects, which were published by Aldrovandi. In 1668, he published his Ephemerides of the Satellites of Jupiter. In 1673, Colbert prevailed on him to settle in France. He discovered four new satellites of Saturn, and the zodiacal light proved that the axis of the moon is not perpendicular to the plane of the ecliptic, and showed the causes of her libration. The laws of this motion, which he determined with much accuracy, are one of his finest discoveries. He also wrote observations on the Indian calendar. The meridian commenced by Picard and Lahire was continued by Cassini, in 1700, to the extreme limits of Roussillon, and, when measured 100 years later, showed a difference of only twenty-one toises. He died Sept. 14, 1712, having lost his sight some years before. Lalande gives a catalogue of his writings in the *Bibl. Astronom.* His first work was *Observ. Cometæ, Anni* 1652—53 (Modena, 1653, fol.). His *Opp. Astronom.* (Rome, 1666) contain a complete collection of his earlier works. His nephew, Cassini de Thury, has published his biography, written by Cassini himself, under the title *Mémoires pour servir à l'Hist. des Sciences* (4to).

2. *James*, son of the preceding, born at Paris, Feb. 18, 1677, was admitted into the academy of sciences in 1694. After several essays on subjects in natural philosophy, &c., he completed his great work on the inclinations of the orbits of Saturn's satellites and ring. His labours to determine the figure of the earth (q.v.) are well known. The first measurement of 1669 made the degrees of the meridian shorter towards the north than towards the south; whence it

was concluded that the earth was an oblong spheroid. Cassini continued the measurement, and maintained this opinion in his work *De la Grandeur et de la Figure de la Terre* (Paris, 1720). In order to settle the question, the academy was commissioned, in 1733, to measure the whole length of France from Brest to Strasburg. Cassini directed this undertaking, but was led into some errors by the defective instruments of former observers. He died in 1756, at Thury. Besides the above mentioned works, he wrote *Elemens d'Astronomie* (Paris, 1740, 4to), and *Tables Astr.* His *eloge* in the *Mém. de l'Acad.* contains a biographical notice of him.

3. *Cassini de Thury, Cæsar François*, son of the preceding, born June 14, 1714, member of the academy from his twenty-second year. He undertook a geometrical survey of the whole of France, embracing the determination of the distance of every place from the meridian of Paris, and from the perpendicular of that meridian. When the support of the government was withdrawn, in 1756, Cassini formed a society for advancing the requisite sums, which were to be repaid by the sale of the maps constructed from the survey. The work was almost entirely finished, when he died (1784), leaving many writings relating to his great topographical undertaking.

4. *Jacques Dominique*, count, son of the preceding, born at Paris, 1740, was director of the observatory, and member of the academy, and was a statesman of ability, as well as a mathematician. In 1789, he presented to the national assembly the *Carte Topographique de France*, in 180 sheets, now increased to 182, by the addition of the *Carte des Assemblages des Triangles*. The *Atlas Nationale* is a reduction of it on a scale of one-third, prepared by Dumey, and other engineers. Cassini was arrested by order of the revolutionary tribunal. He escaped with life, but lost the copperplates of the *Carte de France*, which had cost half a million francs. There is a second reduction of the large map, being only a fourth of the size of the original, in twenty-four plates.

CASSINO; a game at cards, in which four are dealt to each player, four being also placed on the board. The object is to take as many cards as possible, by making combinations. Thus a ten in the player's hand will take a ten from the board, or any number of cards which can be made to combine into tens. The greatest number of cards reckons three points, and of spades, one; the ten of diamonds, two; the two of spades, one; and each of the aces, one.

CASSIODORUS, Marcus Aurelius, a learned Roman, lived at the time of the dominion of the Ostrogoths, and contributed to the promotion and preservation of learning. He was born at Squillace (*Scylaceum*), 480 A. D., or, as some say, 470, filled several public offices in Rome, and became secretary of the Ostrogoth king Theodoric, but, in 537, voluntarily retired to a monastery in Calabria, where he died, 577. He made the monks of his convent copy the manuscripts of the ancient authors, and his book *De Septem Disciplinis liberalibus*, in which he treated of the *trivium* and *quadrivium*, and inserted extracts from the ancient classic literature, was of much value in the middle ages. For Theodoric he also wrote his compilation of letters, *Variarum Epistolarum Libri XII.* He likewise composed *Historia Gothorum* (a History of the Goths), of which we have an epitome by Jornandes, and several theological works of little importance. His works have been collected by J. Caret (Venice, 1679, fol.; new edit. 1721).

CASSIOPEIA, in mythology; daughter of Arabus, and wife of Cepheus, to whom she bore Andromeda. She dared to compare her beauty to that of the Nereides, who, enraged thereat, besought Neptune for vengeance. The god, in compliance with the request of the water-nymphs, laid waste the dominions of Cepheus by means of a deluge and a dreadful sea-monster. Thus it appears that in ancient times, as well as in modern, nations have had to suffer for the faults of their masters. Cassiopeia was the mother of Atymnius by an intrigue with Jupiter.—In astronomy, Cassiopeia is a conspicuous constellation in the northern hemisphere, situated next to Cepheus. In 1572, a new and brilliant star appeared in it, which, however, after a short time, gradually diminished, and at last disappeared entirely. It was thought, at that time, by many persons, that this was the star which appeared to the wise men in the East. The constellation Cassiopeia contains fifty-two stars of the first six magnitudes.

CASSIQUIARI; a river of Colombia, being a large branch of the Rio Negro, and remarkable as forming a communication between the two great rivers, the Amazon and Orinoco. The Cassiquiari flows from the Orinoco, and joins the Rio Negro, which last is a large tributary of the Amazon. The reality of this communication, which had been previously asserted by the Jesuit missionaries, was confirmed by the celebrated traveller Humboldt.

CASSITERIDES, in ancient geography; a name given by Strabo to ten islands, N. W. of Spain, in the open ocean, abounding in tin and lead. Strabo says the Phœnicians only visited them. There are no islands where he describes them to have been. They are, perhaps, the modern *Scilly islands*. It is probable that the ancient merchants kept their true situation secret from interested views, which, in those times, could easily be done.

CASSIUS, Longinus Caius, the friend of Brutus, was the questor of Crassus, and preserved the few troops of that general who escaped from the bloody battle with the Parthians. With these he defended Syria against the Parthians till the arrival of Bibulus. In the famous civil war that broke out between Pompey and Cæsar, he espoused the cause of the former, and, as commander of his naval forces, rendered him important services. When Cæsar, after the victory at Pharsalia, was in pursuit of Pompey, he advanced with a few vessels, while crossing the Hellespont, against a fleet of seventy sail commanded by Cassius, and called upon him to surrender. The latter, astonished by his daring courage, surrendered at his summons. But, when it became evident that Cæsar was aiming at sole sovereignty, Cassius, who was a zealous republican, resolved to destroy the usurper, and executed his plan, with the aid of several fellow conspirators, B. C. 44. He then, together with Brutus, raised an army to maintain his country's freedom. They were met by Octavius and Antony, who professed themselves the avengers of Cæsar, at Philippi. The wing which Cassius commanded being defeated, he imagined that all was lost, and killed himself, B. C. 42. Brutus called him the last of the Romans. See *Brutus* and *Cæsar*.

CASSOWARY (*casuarius*, Briss.); a genus of birds, arranged by Cuvier in his family *brevipennes*, the first of the order *grallæ*, waders, to which they are related solely by their long, naked, stilt-like legs, and long neck. In the form of the bill and their mode of living, they more closely resemble the gallinaceous birds. The shortness of their wings totally unfits them for flying, and it would seem impossible for nature to have furnished muscular power sufficient to move wings large enough to sustain their great weight in the air. Unlike other birds, their pectoral or wing-muscles are comparatively slight and weak, while those of their posterior limbs are very robust and powerful. The

wings of the ostrich are of some assistance to it in running, but those of the cassowary are too short even to be of service in this way. Indeed, its whole plumage is so poorly supplied with feathers as to resemble, at a little distance, a coat of coarse or hanging hair. The cassowaries have three toes, all provided with nails. Two species of the genus are well known, the *common cassowary* (*casuarius*, B.; *struthio casuarius*, L.), inhabiting various islands of the Indian archipelago; and the *emeu* (*C. Novæ Hollandiæ*), or *New Holland cassowary*. The first species, called *galeated* or *helmeted cassowary*, has a laterally compressed beak, with a head surmounted by an osseous prominence, covered with a sort of horny helmet; the skin of the head and superior part of the neck is naked, of a deep-blue and fiery-red tint, with pendent caruncles, similar to those of the turkey-cock. There are some naked, rigid quills on the wings, which are used as weapons of defence. The inner toe-nail is the largest of all. The ostrich is the only bird which surpasses the cassowary in size and strength. From the form of its head, and bright eyes, the cassowary is of a fierce and threatening aspect. This, however, is not a true indication of his character, which is rather timorous and shy. It is about five and a half feet long, from the tip of the bill to the extremity of the longest claw. The head and neck together measure eighteen inches, and the largest toe, including the claw, is five inches long. The claw of the inner toe is three and a half inches long. All the feathers of the cassowary are of the same kind, being entirely designed for covering, and externally are all of one colour. They generally grow double, having two long shafts growing out of a short one attached to the skin. The double feathers are all of unequal length, some on the rump being twelve or fourteen inches long, while others are only three. The stem or shaft is flat, shining, black, and knotted below, having a beard arising from each knot. The beards at the ends of the large feathers are perfectly black, and towards the root of a tawny grey. The feathers on the head and neck are so short and scattered, that the skin appears naked, except towards the hind part of the head, where they are somewhat longer. The wings, without the feathers, are not more than three inches long. The rigid quills or prickles already mentioned are five; the longest is eleven inches in length, and a quarter of an inch thick at the base. The helmet is black in front, and yellow behind. The eye is of a bright yellow, and more than an inch in diameter.

The anatomy of the cassowary differs very materially from that of the ostrich, which it resembles so much in general appearance and habits. The intestines are short, and the *cæcum* small; there is no stomach intermediate to the crop and gizzard, and the *cloaca* is not larger, in proportion, than that of other birds. It feeds on fruits, eggs of birds, &c., but never on grain. It swallows its food with great voracity, and, like the ostrich, bolts down bits of iron, broken brick, glass, &c., without injury. In fact, such substances perform the service, in the digestion of these great birds, that gravel does in that of ordinary fowls.

As might be inferred from its structure, the cassowary is a swift runner, and its mode of progression, being unaided by wings, is as peculiar as it is efficient. In running, the cassowary appears to strike out powerfully with one leg, so as to project its body violently forward with a bounding motion, far surpassing the speed of a horse. It also kicks violently when, in a state of captivity, it is provoked to anger, and can inflict a very severe blow. The eggs of the galeated cassowary are of a greyish-ash colour, verging to green, and are neither as round nor as large as those of the ostrich. The shell is not very thick, and is marked by numerous little deep-green tubercles. The largest of their eggs measure about fifteen inches in length, and twelve round.

The *emeu*, or *New Holland cassowary*, differs from that of the old world by being much larger, and standing higher on its legs, being seven feet two inches in length. The head is destitute of the helmet, and feathered throughout, except around the ear. The plumage is thicker, and the webs of the feathers more perfect. It has neither caruncles to the neck nor prickles on the wings. The nails of the toes are nearly equal. The legs are stout, similar to those of the galeated species, but jagged or dentated along the whole of their back part. The emeu is swifter in running than the fleetest grey-hound. It has not yet been found anywhere but in New Holland. The flesh has a considerable resemblance to beef. The young of the New Holland cassowary are striped with white and brown.

CAST, in the fine arts, is an impression taken by means of wax, or plaster of Paris, from a statue, bust, basso-relievo, or any other model, animate or inanimate. In taking a cast from a living person's face, it is necessary, first, to anoint the eye-brows and eye-lashes and any hairs about the cheeks and temples, with a little sweet oil; then to insert two tubes (oiled also) of pasteboard into the nostrils, so that breathing may be performed through them; a handkerchief is then to be tied loosely over the face, and the head sloped backwards in an elbow chair or sofa. Powdered and calcined plaster of Paris is then to be mixed with spring water to the consistence of cream, and poured in between the face and handkerchief to the depth of half an inch. On becoming fixed or hard, it is to be removed and left to dry. When dried thoroughly it is to be well soaked with lint-seed oil, and an impression may then be taken from it, in plaster of Paris or soft clay; the hollow cast being first split longitudinally down the nose, so that the object cast may be more easily removed. See *Modelling and Sculpture*.

It ought to be observed, that all models should be divided into several pieces or joints; thus, in that covering any round body, one side must be covered, first, with the plaster, and the sides pared with a knife, and smeared with clay and water, then the remaining part of the object covered with plaster, and a joint will thus be formed between the two parts; for, wherever the mixture of clay and water has been applied with a hair brush, the cast will not adhere, and, therefore, will be easily separated with the blunt edge of a knife. It is usual also to make small pits or depressions on the edges, of the size of small buttons, on the edges of the joints of moulds, so that they may lock together well when added, and thus fit closely.

Plaster casts are varnished by a mixture of soap and white wax in boiling water. A quarter of an ounce of soap is dissolved in a pint of water, and an equal quantity of wax afterwards incorporated. The cast is dipped in this liquid, and, after drying a week, is polished by rubbing with soft linen. The surface produced in this manner approaches to the polish of marble. When plaster casts are to be exposed to the weather, their durability is greatly increased by saturating them with linseed oil, with which wax or rosin may be combined. When intended to resemble bronze, a soap is used, made of linseed oil and soda, coloured by the sulphates of copper and iron. Walls and ceilings are rendered water-proof in the same way. See an abstract of a memoir of D'Arcet and Thenard, in Brande's Journal, vol. xxii., 184, and Franklin's Journal, ii., 276.

CAST ENGRAVINGS. An important discovery

has lately been made, which consists in taking moulds from every kind of engraving, whether line, mezzotinto, or aquatinta, and in pouring on this mould an alloy in a state of fusion, capable of taking, as it is stated, the finest impression. No sooner is one cast worn out, than another may immediately be procured from the original plate, so that every impression may be a proof.

CASTAGNO, Andrea del, an eminent painter, was born at the village of Castagno, in Tuscany, in 1409. Being early deprived of his parents, who were extremely poor, he was employed by his uncle to attend cattle in the fields, and, in that situation, by his surprising and untutored essays in the art, attracted the notice of Bernardetto de Medici, who placed him under the tuition of one of the best masters Florence then afforded. At first, he painted only in distemper and fresco, and was in high repute when Domenico Venetiano visited Florence, who had learned, from Antonello da Messina, the new method of painting in oil and varnish, till then unknown in Tuscany. The splendour of this mode of colouring was much admired, and by a pretended friendship for Domenico, Castagno obtained his secret; but, not satisfied with this, he desired to be the sole possessor, and determined to murder his friend and benefactor. This he effected without any suspicion, and continued to practise his ill-acquired art with great success. The real author of this atrocious act was never discovered until Andrea made a full confession of his guilt, shortly before his death, which happened in 1480. The best of his remaining works are at Florence, in the church of St Lucia de Magnuoli, and in the monastery degli Angeli. The latter contains a crucifixion by him, painted on a wall.

CASTANETS; small wooden rattles, made in the shape of two bowls or cups, fitted together, and tied by a string, and then fastened to the thumbs. The fingers being rapidly struck upon them, a tremulous sound is produced, which marks exactly the measure of the dance. Something similar to this was the *crotalon* of the ancients, who also made use of small cymbals in their dances and festivals in honour of Bacchus. It is probable, however, that they had their origin in the East, and were brought by the Moors into Spain. Here, too, they received their name *castanuelas*, from being commonly made of the wood of the chestnut (*castano*), or from their colour. They are still in use in Spain, and here and there in the south of France. The charm of variety has also procured for them a place in ballets and operas, as, for example, in John of Paris.

CASTE; certain classes whose burdens and privileges are hereditary. The word is derived from the Portuguese *casta*, and was originally applied, by the conquerors of the East Indies, to the Indian families, whose occupations, customs, privileges, and duties are hereditary. This term has been sometimes applied to the hereditary classes in Europe; and we speak of the spirit or the prerogatives and usurpations of a caste, to express particularly that unnatural constitution of society, which makes distinction dependent on the accidents of birth or fortune. The division into castes, among the people of the old world, comes to us from a period to which the light of history does not extend; hence its origin cannot be clearly traced: but it is highly probable that, wherever it exists, it was originally grounded on a difference of descent, and in the modes of living, and that the separate castes were originally separate races of people. This institution is found among many nations. According to the accounts collected by Clavigero, some traces of it are apparent among the Peruvians and Mexicans; but it prevails principally in the East, where it has existed from the earliest times, and has become blended with the political condition of the people, because it favours despotism, which is the prevailing form of government. Thus, in Persia, even before Zoroaster, there was a division into four classes or castes; priests (magi), soldiers, husbandmen, tradesmen. But the division into castes was nowhere so perfectly formed, and so entirely interwoven in the whole fabric of civil society, as in Egypt and India. In Egypt (q. v.), this division was perfected, as a political institution, in the flourishing period of the Pharaohs; and the lines of separation which had been drawn, in earlier times, by a difference of descent, and different modes of living, were then rendered still more distinct. The number of castes in that country was originally seven. The class of priests, who formed, in some respects, a highly privileged order of nobility, and maintained possession of the offices of state, was the highest. Next followed the soldiers, who were divided into two classes, and whose occupation was hereditary. Of the remaining castes, the husbandmen, the watermen, who navigated the Nile, the interpreters, who arose subsequently to the rest, and sprung from the Greeks who were invited into the country, and the two castes of herdsmen, formed a gradation of ranks, the order of which is not known, any further than that the herdsmen were the lowest. Among these the swineherd was considered impure, and despised, and was excluded from the temples. In India, there were originally four castes. (See *Hindoos*.) Probably the deep researches into Egyptian antiquities recently made, or in a state of progress, particularly those of Champollion, will throw much light upon this interesting subject.

CASTELCICALA, Don Fabricio Ruffo, prince of, descended from a very ancient Neapolitan family, obtained great influence under the minister Acton (1796), in the infamous political inquisition or junta. When Acton resigned his ministry, prince Castelcicala became minister, and Vanini committed suicide. After the battle of Aboukir, Castelcicala persuaded his court to declare war against France. In 1799, he fled with his monarch to Sicily. Two years after, he was Sicilian ambassador in London, and still later at the French court. In 1816, he signed the important treaty admitting all British productions and manufactures into Sicily on paying 10 per cent. duty. After the revolution (1820), he was appointed ambassador to Madrid, but remained in Paris. He died of cholera in 1832.

CASTELLO, Gabriel Lancelot, an eminent antiquary, was born at Palermo, in 1727, of a noble family, and was placed under a private tutor, with a view to study botany, chemistry, &c.; but, accidentally meeting with some old coins, which had been dug up by a ploughman, he was seized with a great desire to decipher them, and from that time devoted himself to antiquarian pursuits. He formed a splendid collection of the remains of antiquity found in Sicily, and his museum was always open to foreigners as well as to natives. On his death-bed, he bequeathed a large quantity of books, &c. to the public library of Palermo. He died in 1794, being at that time an honorary member of the royal society, and of the academy at Paris. He published several works. There was another Castello (Ignatius Paterno), who published an account of the earthquake in Sicily in 1783.

CASTI, Giambatista, a poet, born in 1721, at Prato, in the vicinity of Florence, studied at Montefascone, became professor there, was appointed a canon, and made a journey to France. Receiving an invitation from the prince of Rosenberg, who became acquainted with him in Florence, he went to Vienna, and was presented to Joseph II. who knew

how to appreciate the genius of the poet, and delighted in his conversation. Casti took advantage of every opportunity of visiting other courts, and joined several embassies, without office or title. Catharine II. received him in the most flattering manner. He visited also the court of Berlin, and several other German courts. After his return to Vienna, prince Rosenberg, the director of the imperial theatre, caused him to be appointed *poeta Cesareo* on the death of Metastasio. After the death of Joseph II., Casti requested his dismission, and retired to Florence, where he wrote many of his works. In 1783, he went to Paris. Notwithstanding his advanced age, the vigour and activity of his mind were still unimpaired. His vivacity, his *naiveté*, seasoned by a delicate irony, and his knowledge of the world, made his conversation very attractive. At the same time, he was remarkable for the firmness of his character and the regularity of his habits. He died suddenly, Feb. 7, 1803, at the age of eighty-two. His *Novelle galanti* were republished at Paris, 1804, under the title *Novelle di Giamb. Casti*, in 3 vols. They are forty-eight in number. Almost all are of a licentious character, but written in a lively, original, and graceful style. The same may be said of his didactic-satirical poem, *Gli Animali parlanti, Poema epico, diviso in* 26 *Canti, di Giamb. Casti* (Milan, 1802, 5 vols.), which he wrote between 1792 and 1799, and which did not receive the attention it deserves until the present day, probably because people formerly feared to speak openly on the bitter truths which it contains. There are two translations of it in French, and one in German. It has been also translated into English by Rose. Casti's *Rime Anacreontiche* are pleasing, and his comic operas, *La Grotta di Trofonio*, and *Il Re Teodoro in Venezia*, *&c.*, are full of wit and originality.

CASTIGLIONE, Baldassare; one of the most elegant of the elder Italian writers; born 1478, at Casatico, in the territory of Mantua; studied at Milan, and entered into the service of the duke Ludovico Sforza, and afterwards of the duke of Urbino, of whose elegant and splendid court he soon became an ornament. In 1505, he was sent as an ambassador to Henry VIII. of England, and, in 1507, in the same capacity, to Louis XII., at Milan. In 1513, Castiglione appeared as ambassador at the court of Leo X., where he became intimate with the most distinguished literati and artists. In 1521, he obtained for the new duke of Urbino, Federigo, the command of the papal troops, and, in 1524, was employed by pope Clement VII., to conduct his negotiations with Charles V. When Rome was plundered by the constable of Bourbon, in 1527, he was accused of negligence, and his health was undermined by chagrin. He refused to accept the rich bishopric of Avila, which was offered to him by the emperor, until the pope should be reconciled with Charles. He died Feb. 8, 1529, at Toledo. Among his works the *Libro del Cortigiano* is the most celebrated. It teaches the art of succeeding at court. His few Italian and Latin poems are elegant. His letters (Padua, 1769) are valuable contributions to political and literary history.

CASTILE, New; a province of Spain, bounded N. by Old Castile, E. by Arragon and Valencia, S. by Murcia, Jaen, and Cordova, and W. by Estremadura; 220 miles long, and 160 broad. It contains the following subdivisions or provinces:—

Provinces.	Sq. m.	Pop.	Capitals.
Madrid, . .	1,330	228,500	Madrid.
Guadalaxara,	1,970	121,100	Guadalaxara.
Cuença, . .	11,410	294,300	Cuença.
Toledo, . .	8,863	370,600	Toledo.
La Mancha, .	7,620	205,600	Ciudad Real
	31,193	1,220,100	

The surface is diversified, consisting partly of extensive plains, and partly of ranges of mountains, of which the most remarkable is the Sierra de Cuença. The principal rivers are the Tagus, Guadiana, and Xucar. The climate is temperate, the soil naturally fertile, but the cultivation backward, and the country thinly inhabited. The productions are wheat, barley, hemp, flax, wine, oil, saffron, honey, sheep, cattle, &c. It contains one archbishopric (Toledo), one bishopric (Cuença) and formerly had three universities, Alcala, Toledo, and Siguenca. For further information, see *Spain*.

CASTILE, Old; a province of Spain, bounded N. by Asturia and Biscay, E. by Navarre and Arragon, S. by New Castile, and W. by Leon; 220 miles long, and, where widest, 120 broad. It contains the following provinces or subdivisions:—

Provinces.	Sq. m.	Pop.	Capitals.
Avila, . .	2,600	118,100	Avila.
Segovia, . .	3,502	164,000	Segovia.
Soria, . .	4,118	199,000	Soria.
Burgos, . .	7,752	470,600	Burgos.
	17,972	951,700	

The surface is diversified with mountains, plains, and valleys. The soil is generally fertile, but, in some parts, stony and unfruitful. The productions are rye, barley, wheat, madder, in some parts, wine; but its chief wealth consists in its hundreds of thousands of sheep and cattle. Its butter is excellent, and its wool, particularly that of Segovia, is much celebrated for its fineness. The country is remarkably bare of trees, as is also much of New Castile. The rivers are the Ebro, Duero, Xalon, Carrion, and Tormes. For further information, see *Spain*.

CASTING, in the fine arts. See *Cast*.

CASTING, in iron founding, is the running of melted iron into a mould prepared for that purpose. There are three sorts of casting; the first called *open sand-casting*, the second, *sand-casting between flasks*, and the third, *loam-casting*. In most of these an exact pattern, usually of wood, is employed by the founder. The floor of every foundery is composed, for several feet deep, of a loamy sand found near Woolwich, in which deep pits may be sunk to bury large moulds. This floor must be kept exceedingly dry, and free from any wet or moisture, otherwise, the melted matter converting the watery particles into vapour, would blow up the building and destroy the workmen. In the place where the mould is to be made, a layer of sand is lightly sprinkled through a sieve on the floor, and the wooden pattern pressed firmly down into it, level with the surface. The sand is then to be shovelled up all around, level with the top of the pattern, and rammed down with a tool. A moist sponge is then used for slightly wetting the sand all round the edges of the pattern, to make its particles adhere together. The next operation is lifting the pattern out of the sand, by one or more screws, screwed into the wood. If the pattern is small, this can be easily done by one or more men; but in very large works it is effected by a crane. The cores for the bolt holes through the flanches, are made by sticking pieces of dry clay in the sand in the proper places, and the core for the hole made of clay, is also set into its place: the workman then uses a pair of bellows for blowing away any small pieces of sand which may have fallen into the mould, and then sifts some finely powdered charcoal over its surface. It is now ready for filling with metal. In small works this is done by ladles, and in large, by small channels made in the sand, leading from the mould to the mouth of the furnace. When the mould is filled, the hot metal is covered with sand to keep the air from it while it is cooling.

Sand-casting between flasks is used for more complex articles than the former; such, for instance, as if they were cut into two or more pieces, (provided the cutting planes were parallel to each other,) each separate piece might be cast in open sand. The flasks are iron frames, furnished with four handles, by which they may be lifted, and having iron points fitting into holes prepared in the other flask, for joining them accurately together. The under flask being placed upon a board filled with sand, and the sand rammed tight into it, the workman then takes the pattern and presses one half of it into the sand, and smooths the sand up to the sides of it with a trowel; he then sets the empty flask over the other, adjusting its points to the holes, and after sprinkling some sand which has been burnt (to free it from moisture) over the sand in the under flask, he fills the upper one with sand, and rams it down; he next, with a piece of wood, put through the sand in the upper flask, makes a hole to pour the metal through. The upper flask, with the sand in it, is then raised off by men by the handles, or in large works by a crane, and the pattern lifted out. The flask is then put on again, and heavy weights laid upon it to keep it down ready for casting. It must be observed, that at every uppermost point of large moulds, a small hole must be bored through the sand in the upper flask, to allow the rarified air to escape out of the mould when melted metal is poured in.

Loam-casting is used for bulky, hollow articles, such as cylinders, large pipes, cauldrons, boilers, &c., and is conducted in this manner: if, for instance, a large cylinder is to be cast, a mould has first to be made as follows: To a beam in the roof of the foundery is affixed a perpendicular spindle, with three or four holes through it, to fix an iron arm in, at different heights, by means of a nut. This arm has two bars placed at such a distance as to be capable of receiving a wooden plank, which can be firmly secured to them by means of two clamps. The operation is then begun by laying an iron ring upon the ground, and adjusting it so as to be concentric to the spindle. A cylinder of brick-bats, or clay and wet loam (instead of mortar), is then to be built upon it, some inches less in diameter than the intended cylinder, for which this is to form a core: the brick-bats are then to be firmly bound together with iron hoops, annealed wire, &c., and a fire is then to be lighted within it to dry it. When the loam used between the bricks is dry, a coating of loam is spread over it, and is perfectly smoothed, by causing the edge of the perpendicular board to revolve round it. This coat makes it of the proper size for the inside of the cylinder to be cast, and is called the core of the mould. Another cylinder is built, plastered, and smoothed in the same way, except that no hoops are used, whose diameter is the same as the outside of the cylinder to be cast. When this is finished, it is covered with a coating of charcoal, ground up with water, like paint, laid on with a brush, and a thin coating of loam is laid on; this is bound round with hoops, and to these four hooks are fixed to lift it by; a thick coat of loam and hair is then laid over it. When all these are dry, a man then gets down into the cylinder, and with a small pick pulls down all the bricks in the inside cylinder, and then with a trowel cuts away all the loam, leaving the inside of the external cylinder (which is called the mould) quite smooth. This is effected by the coating of powdered charcoal, which prevents the two coats of loam from adhering together. A deep pit is now dug, in some convenient part of the foundery, into which the core is let down by a crane. The core being placed in the pit, the mould is let down after it by the same means; and, when they are adjusted, the sand is thrown and rammed round about half the height; a flat cover of dried loam is then put on the top of the mould and core, and round pieces of wood are put in the holes which had before been made in the cover for pouring the metal in at. The burying of the mould is then completed. When it is all levelled, the sticks which keep open the holes for the metal are carefully withdrawn, and small channels made from the furnace to allow the melted iron to find its way to the mould. When the form is more complicated, as in pear-like shapes, &c., where a man cannot be introduced to pick out the bricks, the mould must be sawn in half, perpendicularly, with a fine saw, to get it off. It is then put together again round the core, and the crack plastered up with loam.

CASTLEREAGH, a barony in the county of Down, Ireland. The castle stands on the summit of a Danish rath, and was once the seat of an O'Neil. It is now the property of the marquis of Downshire. The barony gives the title of viscount to the marquis of Londonderry.

CASTLEREAGH, Lord. See *Londonderry*.

CASTOR and POLLUX; the sons of Tyndarus, king of Lacedæmon and Leda, or, according to some, of Jupiter and Leda. The fable runs, that Leda brought forth two eggs, one of which contained Pollux and Helen, the other Castor and Clytemnestra. Pollux and Helen being the offspring of Jupiter, were immortal; but Castor and Clytemnestra were begotten by Tyndarus, and mortal. The two brothers were inseparable companions, equally brave and spirited, and attached to each other with the fondest affection. Castor was particularly skilled in the art of breaking horses, and Pollux in boxing and wrestling. They were among the heroes of the Argonautic expedition, in which they acquired divine honours; for, a terrible tempest having arisen on the voyage, and all, with loud voices, calling on the gods to save them, there suddenly appeared over the heads of Castor and Pollux two star-like meteors, and the tempest subsided. From this time, they were the patron deities of mariners, and received the name of *Dioscuri;* and from them the name of *Castor and Pollux* was given to the fires that are often seen on vessels' masts in storms, and which are electrical phenomena. After their return, they released their sister Helen from the confinement in which Theseus had for some time held her. They were also among the heroes of the Calydonian hunt. They wooed the daughters of Leucippus, Phœbe and Ilaria, and were each obliged to contend for their mistresses with their rivals, Idas and Lynceus, the sons of Aphareus. Castor killed Lynceus, and was slain by Idas. Pollux revenged his brother's death by killing Idas; but, full of grief for the loss of Castor, he besought Jupiter either to take away his life, or grant that his brother might share his immortality. Jupiter listened to his request, and Pollux and his brother alternately descended to Orcus and returned to life. It is doubtful whether the ancients understood them as being together or separate in their alternate passage between the upper and the lower worlds. The former opinion seems to be the oldest; the latter, to have gained ground subsequently. Temples and altars were consecrated to them. In great perils, especially in battles, the ancients believed that they frequently appeared to mortals as two youths on white steeds, in shining garments, with meteors over their heads; and then they were chiefly called *Dioscuri.* They were also represented side by side, either riding or standing, each holding a horse by the rein, with spears in their hands and stars on their heads.—In the heavens, the *Dioscuri* appear as one of the twelve constellations of the zodiac (the Twins).

CASTOR-OIL. The castor-oil plant (*ricinus pal-*

na Christi) is a native both of the East and West Indies, and has a stem from five to fifteen or sixteen feet in height, and large, bluish-green leaves, divided into seven lobes, serrated and pointed, the foot-stalks long, and inserted into the disk. The flowers are produced in a terminating spike, and the seed-vessels are covered with spines, and contain three flattish, oblong seeds.—It is to the seeds of this plant that we are indebted for the drug called *castor-oil*. It is now often prepared by pressing the seeds in the same way as is practised with oil of almonds. The oil thus obtained is called *cold expressed*. But the mode chiefly adopted in the West Indies is first to strip the seeds of their husks or pods, and then to bruise them in mortars. Afterwards they are tied in linen bags, and boiled in water until the oil which they contain rises to the surface. This is carefully skimmed off, strained, to free it from any accidental impurities, and bottled for use. The oil which is obtained by boiling is considered more mild than that procured by pressure, but it sooner becomes rancid. The mildest and finest Jamaica castor-oil is very limpid, nearly colourless, and has scarcely more smell or taste than good olive-oil. Many people, however, have so great an aversion to castor-oil, even in its purest state, that they do not take it without great reluctance. The uses of castor-oil in medicine are well known.

CASTRAMETATION; strictly, the art of tracing out and disposing to advantage the several parts of a camp on the ground. It is sometimes used more extensively to include all the ordinary operations of a campaign. A camp, whether composed of tents or barracks, or merely of places assigned for bivouacking, must be divided in such a way that the several divisions shall be disposed as they are intended to be when drawn up in order of battle; so that, on a sudden alarm, the troops may rise in their proper posts. At the same time, the places for cooking, for the baggage, and for ammunition, must be conveniently arranged.

CASTRATES. The change produced in men by emasculation is highly remarkable, and assimilates their constitution, in some respects, to that of females. The elasticity of the fibres and muscles is weakened, and the cellular membrane becomes charged with a much larger quantity of fat; the growth of the beard is prevented; the upper part of the windpipe contracts considerably, and the castrate acquires the physiognomy and voice of a female. On the moral character it likewise appears to have some influence, by weakening the intellectual faculties, and rendering the subject unfeeling, morose, faint-hearted, and, on the whole, incapable of performing those deeds which require a high, magnanimous disposition. The most numerous class of castrates are those who are made such by the removal of the testicles. Another class are not deprived of the parts of generation, but have them ingeniously injured in such a manner as to leave them the faculty of copulating, but deprive them of the power of begetting. Juvenal mentions these as the particular favourites of the licentious Roman ladies. To the third class belong those who are entirely deprived of their genital members. They are used in preference, by the Turks, as keepers of their women. The castrates of all three classes are called *eunuchs*. Those of the third class, to distinguish them from the two others, are frequently termed *entire eunuchs*. The word *eunuch* is Greek, and signifies *guard* or *keeper of the bed*. The castration of adults produces some change in the disposition, but little in the bodily constitution. Even the power of engendering continues for a short time. According to the accounts of ancient historians, the Greeks, particularly the Lydians, castrated women. The latter are said to have used these beings as guards of their wives and daughters. With females, the operation produces a completely opposite effect to that which it has on men. The sexual appetite ceases, a beard appears on the chin and upper lip, the bosom vanishes, the voice becomes harsh, &c. Boerhaave and Pott relate modern instances of this kind. Nothing but an immediate and fatal injury to the parts authorizes an operation of such vital consequence to the human race. Among the evils which religious enthusiasm has at all times produced, castration is conspicuous. The emperors Constantine and Justinian were obliged to use their utmost power to oppose this religious frenzy, and could put a stop to it only by punishing it like murder. The Valerians, a religious sect, whose minds had been distracted by the example of Origen (q. v.), not only considered this mutilation of themselves as a duty which religion imposed on them, but believed themselves bound to perform the same, by fair means or foul, on all those who came into their power. In Italy, the castration of boys, in order to form them for *soprano* singers, has been in use for a long time, *evirati* having been employed in the pontifical chapel, ever since the beginning of the 17th century, to sing the treble parts. Clement XIV. prohibited this abuse, which, notwithstanding, continued for a long time, and, in some Italian towns, was not only suffered, but exercised with such shameful openness, that the practitioners gave public notice of their profession. In modern times, severe laws have been enacted against castration, and the custom is going out of use. Beings thus mutilated, however, are sometimes to be found on European stages and in Catholic churches. Among the papal singers, we find castrates as late as 1823. It is remarkable that so odious and unnatural an operation should produce the fine effect on the tones of the singer, which all must acknowledge who can rid themselves of the disagreeable effect of the association. In the Catholic church, no castrate, however he became such, is permitted to be an officiating priest. The part which eunuchs have always played, wherever they have belonged to the household of princes, is well known; and some authors have compared them to Catholic priests, who, like them, have often been the intriguing advisers of sovereigns, and, like them, are not connected with society by the gentle bonds of marriage and family relations.

CASTRIOT. See *Scanderbeg*.

CASTRUM DOLORIS, a Latin term, signifying *castle of grief*, has a different meaning from *catafalco*. The latter is used to denote an elevated tomb, containing the coffin of a distinguished person, together with the tapers around, ornaments, armorial bearings, inscriptions, &c., placed in the midst of a church or hall. The *castrum doloris* is the whole room in which the *catafalco* is elevated, with all the decorations. The sarcophagus, usually empty, is exposed for show upon an elevation covered with black cloth, under a canopy surrounded with *candelabra*. Upon the coffin is laid some mark of the rank of the deceased, as his epaulette or sword, and, when the deceased was a sovereign or a member of a ruling family, princely insignia are placed on surrounding seats. The French call the *castrum doloris*, *chapelle ardente*, which is to be distinguished from *chambre ardente* (q. v.).

CASUISTRY; that part of the old theology and morals, which relates to the principles by which difficult cases of conscience (especially where there is a collision of different duties) are to be settled. Kant calls it the *dialectics of conscience*. Hence a casuist is a moralist who endeavours to solve such doubtful questions. There have been many celebrated casuists among the Jesuits (e. g., Escobar, Sanchez, Busenbaum, &c.), famous for their ingenuity in the

invention of such cases, and for the ambiguity and singularity of their solutions. It is impossible, without reading the works of some of the casuistical writers, to form an idea of the ingenious and fine-spun sophistry which they contain.

CAT (*felis catus*, L.); a well-known domesticated, carnivorous quadruped, whose attachment appears to be rather to the dwellings than the persons of her protectors; in which respect her conduct is very opposite to that of the dog, whose alliance with man is founded upon disinterested, personal attachment, not to be affected by changes of place or fortune. Her youthful sportiveness, beautiful fur, and gentle demureness of manner in after life, dispose mankind to regard the animal with kindness; but the most persevering attempts to cultivate her good dispositions are followed with such slight success, and met with so much of deceit and ingratitude, as to weary the patience of the most benevolent. The cat is capable of showing considerable fondness for an individual, but never appears to confide fully, even in the warmest demonstrations of kindness. Her treacherous calmness of disposition needs but slight provocation to be changed to vengeful malignity. When hurt, or much alarmed, she is ready to attack her best benefactor with as much fury as a stranger. Being highly sensitive, and fond of ease, the cat evinces little anxiety, except for the continuance of her enjoyment, and is ever prepared to seek more comfortable quarters, whenever the condition of her patrons may render a movement politic. At what period cats became inmates of human habitations, it is scarcely possible, at this period, to determine. Beyond doubt, their usefulness in destroying rats, mice, and other small animals, first introduced them to notice. The first mention we find made of them, in profane history, is by Herodotus, the father of historians, in his account of Egypt. (*Euterpe, vel* lib. ii.) He speaks of them as diminishing the vermin infesting human dwellings; states some of the Egyptian superstitions relative to them, as well as some observations upon their breeding, dispositions, &c. The celebrated naturalist Temminck, in his excellent monography of the genus *felis*, adduces strong reasons for believing that the cat was originally domesticated in Egypt, and that the gloved cat, *F. maniculata* (*chat ganté* of Southern Africa) is, in all probability, the original stock of the domestic cat. Its strong resemblance in size, proportions, &c., renders this opinion more acceptable than that which attributes the origin to the common European wild cat, which is smaller, has a shorter, thicker tail, and, indeed, would seem rather to be the domestic cat returned to the savage state, than its original stock.

The subtlety and circumspection of the common cat are evinced by all its habits and movements; and the observation of this disposition has obtained for it the name it bears in most of the living languages of Europe. In Greek it is called *αἴλουρος*, for which we have found no derivation. In Latin, it was called *catus*, from the adjective signifying *cunning, wary, subtle*, &c. According to Varro, this adjective is a Sabine, and not a Roman word; but, as we find it used by Horace, in his ode *Ad Mercurium*,* its admission into the classic vocabulary can scarcely be denied. From this name, *catus*, we have the English *cat*, the German *katz*, the French *chat*, &c. The domestic cat belongs to a genus (*felis*) better armed for the destruction of animal life than all other quadrupeds. The short and powerful jaws, moved by vigorous muscles, are supplied with most formidably trenchant teeth: a cunning disposition, combined with nocturnal habits and much patience in pursuit, gives them great advantages over their prey; and their keen, lacerating claws, which are always preserved in the most acute state by the peculiar arrangement that keeps them concealed when not in use, enables them to inflict a death-blow on their victims with as much certainty as ease. The cat, in a degree, partakes of all the attributes of her race—lies in ambush for her prey, and seizes it by a sudden leap; plays with her captives before putting them to death; and does not limit her destruction to the mere gratification of appetite. Cold and wet are disagreeable to the cat, and electricity is especially feared by her: advantage may be taken of the latter circumstance to avert the troublesome visits of the animal. After having once received a shock from a Leyden vial, but little apprehension need be entertained of the cat's return to the same place. Of various aromatic substances, as catnep or catmint, &c., puss is remarkably fond; and the odour of valerian appears to throw her into an ecstacy of pleasure. The food of the cat, in a state of domestication, is necessarily very various, but always of flesh or fish, if it can be obtained. A desire to possess herself of the latter article of diet, proves one of the strongest temptations to theft that the cat is exposed to: in fact, it takes a very severe education to make her any better than a thief under any circumstances. The cat is remarkable for the fetor of its eructations, as well as the powerfully offensive and phosphorus-like odour of its urine, &c. But, personally, it is a very cleanly animal, avoiding to step in any sort of filth, and preserving its fur in a very neat condition. Of its habits, when well taken care of and much petted, it cannot be necessary to speak here, as they are universally known. Equally notorious is their clamorous mode of making love, which is designated by the term *caterwauling*, and, once heard, can never be forgotten. The cat goes with young for sixty-three days, and brings forth from three to six at a litter, which remain blind for nine days.

CAT-BIRD (*turdus felivox*, Viell; *T. lividus*, Wils.); a numerous and well-known species of American thrush, which annually advances from the south with the progress of agriculture, and, during the summer, is found throughout the Middle and New England States, frequenting thickets of brambles, or the shrubberies of gardens. The note from which the bird obtains its name is strikingly similar to the plaint of a kitten in distress, and would almost certainly deceive the ear of any one unacquainted with the cry of this species. The cat-bird is exceedingly familiar and unsuspicious, allowing itself to be closely approached, and saluting every one passing near its abode by its cat-like note. It is lively and active in its movements, and, but for the unfortunate resemblance of its ordinary cry to the voice of an animal by no means a favourite, would be considered an agreeable bird, notwithstanding its plain, lead-coloured plumage. Wilson informs us, that the cat-bird arrives in the lower parts of Georgia about the end of February, whence he infers that its winter residence is not far distant from Florida. It reaches Pennsylvania by the second week in April, and has its nest built by the beginning of May. For this purpose, a brier or bramble thicket, a thorn-bush, thick vine, or fork of a sapling, is selected. Little attention is paid to concealment, though few birds are more solicitous for the safety of their young. The nest is constructed of dry leaves, weeds, small twigs, and fine, dry grass, the inside being lined with fine, black, fibrous roots. The female lays four or five eggs, of a uniform greenish-blue colour, free

* Mercuri, facunde nepos Atlantis
Qui feros cultus hominum recentum
Voce formasti *catus* et decoræ
More palæstræ. *Lib. i. Carm.*

from spots. They generally raise two, and sometimes three, broods in a season.

The admirable naturalist above mentioned relates, that he sometimes, when in the woods, amused himself with imitating the violent chirping or squeaking of young birds, in order to discover what species were in his vicinity; and these sounds, to birds in the breeding seasons, he compares to the alarm of fire in a large and populous city. On such occasions of alarm and consternation, the cat-bird is the first to make his appearance, not singly, but sometimes half a dozen at a time, flying from different quarters to the spot. Other birds are variously affected, but none show symptoms of such extreme suffering. He hurries backward and forward with hanging wings and open mouth, calling out louder and faster, and actually screaming with distress, till he appears hoarse with his exertions. He attempts no offensive measures, but he bewails, he implores, in the most pathetic terms with which nature has supplied him, and with an agony of feeling which is truly affecting. This species does not readily desert its nest; and, when the eggs or young of other birds are placed in it, they are content to throw out the intruders, and continue their attentions to their own family. When the nest and eggs are carefully removed to another place by man, the parents follow, and do not remit their cares. Before the dawn, when there is scarcely light enough to render it visible, the cat-bird generally begins its song, while fluttering with great sprightliness from bush to bush. His notes are more singular than melodious, consisting of short imitations of other birds, but failing where strength and clearness of tone are requisite. He appears to study certain passages with great perseverance, commencing in a low key, and, as he succeeds, ascending to a higher and freer note, unembarrassed by the presence of a spectator, even within a few yards. An attentive listener discovers considerable variety in his performance, apparently made up of a collection of odd sounds and quaint passages. The cat-bird is a great enemy to the common black snake or horse-runner (*coluber constrictor*), which rifles its nest whenever an opportunity offers. As the cat-bird uniformly attacks or pursues this snake, and is frequently seen in the act of hopping eagerly after it, numerous ridiculous stories are related of its being fascinated or charmed by the snake. The testimony of Wilson and Bartram show that the bird is almost uniformly the aggressor and victor, driving the snake to its hiding-place. In one instance, the writer witnessed an attack of a cat-bird on the black snake, almost precisely similar to that related in Wilson's Ornithology, by his venerable friend, the naturalist Bartram. The cat-bird is nine inches long, and, at a short distance, appears nearly black, but, on a closer inspection, is seen to be of a deep slate-colour above, lightest on the edges of the primaries, and of a considerably lighter slate-colour below, except under the tail coverts, which are of a very dark red; the tail, which is rounded, and the superior part of the head, as well as the bill and legs, are black.

CAT ISLAND, or ST SALVADOR, or GUANAHANI, or GUANIMINA; one of the Bahama islands, about sixty miles in length from N. to S., and twelve in its mean breadth. Population, in 1797, 937. This island is remarkable for being the first land of America discovered by Columbus, who landed here Oct. 12, 1492, and named it *St Salvador*. Lon. 75° W.; lat. 24° 30′ N.

CATACOMBS (caverns, grottoes, subterraneous caves, destined for the sepulture of the dead). The respect felt for the dead, by all nations, naturally led them to some outward manifestation of regard such as the pomp of funeral solemnities, or the consecration of a particular spot for sepulture, or the erection of monuments, to transmit to posterity the remembrance of the services or virtues of the deceased. Some nations, as the Egyptians, constructed pyramids and labyrinths to contain their mortal remains. Others, as the Phœnicians, and, after them, the Greeks, hollowed out the rocks for tombs, surrounding their towns with vast magazines, containing the bones of their fathers. Asia Minor, the coast of Africa, and Cyrenais, afford instances of these singular and gigantic works. The Romans, not so bold, but still more magnificent, embellished their roads with superb mausoleums and sarcophagi of marble, consecrated to their distinguished families. At a later period, when the change of their religion made it necessary to conceal these last marks of regard, they consecrated vast subterraneous caverns to the purpose of tombs. The discovery of these monuments has always excited the curiosity of travellers and the attention of artists. The latter have applied themselves to learn from them the character of architecture and painting at different epochs; and, though they have often found only coarse representations, the productions of art in its infancy or decline, they have occasionally met with types of perfection. Many monuments of this description have been preserved to our days, and still contain traces of the painting and architecture with which they were decorated. There are catacombs existing in Syria, Persia, and among the most ancient Oriental nations. But the revolutions in these countries, and the changes which they have occasioned, have deprived us of the documents which would have given us exact information regarding them. The description of the catacombs in Upper Egypt gives us an idea of those whose existence is still unknown to us. They contain the history of the country, and the customs and manners of the people, painted or sculptured in many monuments of the most admirable preservation. The subterraneous caves of these countries, like almost all of the kind, have their origin in quarries. From the depths of the mountains which contain them, stone was taken, which served for the building of the neighbouring towns, and also of the great edifices and pyramids which ornament the land. They are dug in a mountain situated in the neighbourhood of the Nile, and furnished the Romans with materials for the construction of buildings in their colonial establishments. The excavations in these mountains are found throughout a space of fifteen to twenty leagues, and form subterraneous caverns, which appear to be the work of art; but there is neither order nor symmetry in them. They contain vast and obscure apartments, low and irregular vaults, supported, in different parts, with piles, left purposely by the workmen. Some holes, of about six feet in length and two feet in width, give rise to the conjecture, that they were destined for sepulchres. Cells of very small dimensions, formed in the hollows of these obscure caverns, prove them to have been the abode of recluses.

In Sicily and Asia Minor, a prodigious number of grottoes and excavations have been discovered, containing sepulchres. Some appear to have served as retreats to the victims of despotism: the greater part are the work of the waters which traverse the mountains of these regions, as, for instance, the great cave of Noto, which passes for one of the wonders of Sicily. This cave, the height, length, and breadth of which are equal, has been formed by the river Cassibili, which runs at the bottom, and traverses it for the length of 100 fathoms. In the interior of this cave are a number of houses and tombs. In the ancient Hybla, there is a grotto containing many sepulchres, near which is the tomb of Æschylus. At

Vela are abodes for the living and sepulchres for the dead, cut in the rocks; at Agrigentum, subterraneous caves, labyrinths, and tombs, arranged with great order and symmetry. There are also caverns in the environs of Syracuse, which may be ranked with the principal monuments of this description, from their extent and depth, their architectural ornaments, and from some historical recollections attached to them. In the catacombs of Rome, coffins are sometimes found, and it is supposed that the bones in them belonged to Christians. Inscriptions are also seen on the walls of the apartments. But, though they may not have been used by the Christians as tombs, it is certain that they served for places of assembling for secret exercises of devotion. See Artaud's *Voyage dans les Catacombes de Rome*, Paris, 1810.

The catacombs in the tufa mountains of Capo di Monte, near Naples, consist of subterraneous galleries, halls, rooms, basilicas, and rotundos, which extend to the distance of two Italian miles. Throughout there are seen niches for coffins (*loculi*) and bones. A description of them was given by Celano, in 1643. They probably owe their origin to the quarries which afforded tufa for the walls of the cities Palæopolis and Neapolis, and afterwards served as sepulchres for the Christian congregations.

The catacombs of Paris are extensive subterraneous galleries, to which you descend from the buildings on the western side of the *barrière d'enfer*. The name itself, which has been given to this labyrinth of caverns and galleries, from its resemblance to the asylums and places of refuge of the persecuted Christians under Naples and Rome, informs us of the purpose to which it has been applied since 1786. These galleries were originally the quarries from which materials were excavated for constructing the edifices of the capital. The weight of the superincumbent houses rendered it necessary to prop them; and when the cemeteries of the demolished churches and the burying-grounds were cleared in 1786, the government resolved to deposit the bones in these quarries, which were consecrated for that purpose. The relics of ten generations were here united in the repose of the grave. Eight times as great as the living tide that rolls over this spot is its subterraneous population. By the light of wax tapers you descend ninety feet to a world of silence, over which the Parisian police keeps watch as strictly as over the world of noise and confusion above. You enter a gallery, where two can just go abreast. A black streak on the stones, of which the walls consist, points out the way, which, from the great number of intersecting bye-passages, it would be difficult to retrace without this aid, or without guides. The plain of Montrouge and the great suburb St Jacques, as well as St Germain, and, according to some, the channel of the Seine, are thus undermined. Among the curiosities of this part of that lower world is a plan of the harbour of Mahon, which, in his hours of leisure, an ingenious soldier faithfully copied, from memory, in the material of the quarries. You finally enter the hall, whence you are ushered into the realms of death by the inscription which once stood over the entrance to the churchyard of St Sulpice:—*Has ultra metas requiescunt beatam spem expectantes*. Narrow passages between walls of skeletons; chambers in which mausoleums, altars, candelabrns, constructed of human bones, with festoons of skulls and thigh-bones, interspersed, occasionally, with inscriptions, not always the most happily selected, from ancient and modern authors, excite the gloomy impression which is always produced, even in the most light-minded, by the sight of the dissolution of the human frame. Fatigued with these horrible embellishments, you enter a simple chapel, without bones, and containing an altar of granite. The inscription D. M. II et III Septembr. MDCCXCII. recalls to memory the victims of those mournful days whose remains are here united. It is the only spot in the whole labyrinth, that speaks immediately to the heart of every body. On leaving these rooms, consecrated to death, where, however, the air is always preserved pure by means of secret passages, you may visit a geological cabinet, formed by Mr Hericourt de Thury, the director of the *carrières sous Paris*, who has also published a description of them (Paris, 1815). Specimens of the minerals furnished by the regions you have traversed, and a collection of diseased bones, in a contiguous hall, scientifically arranged, are the last curiosities which these excavations offer. Three hundred toises east of the road to Orleans you finally turn to the light of day. We understand that it has lately been prohibited to visit this remarkable spot, because a person had lost himself in this labyrinth, and had never been heard of again.

In Rome, there is a Franciscan church, under which, for centuries, the bones of the monks of the convent, and of many persons, who think their eternal happiness will be promoted by their burial there, have been preserved, ingeniously arranged in columns, altars, arches, garlands, festoons, and architectural ornaments. Every year, mass is read there.

CATACOUSTICS (from κατα, and ἀκούω, *I hear*), called, also, *cataphonics;* the science of reflected sounds, or that part of acoustics which considers the properties of echoes. See *Acoustics.*

CATAFALCO. See *Castrum Doloris.*

CATALEPSY. This is a spasmodic disease, and, by some regarded as a species of *tetanus*. It affects the whole body, so as to render it immovable, as if dead. *Tetanus* differs from *catalepsy* in its subjects and causes. Females are most liable to the last, while the first is equally produced in both sexes by appropriate causes. Tetanus is most frequently produced by punctured wounds of tendinous textures, and most readily in hot weather. Sometimes, however, it occurs, like catalepsy, independently of wounds. The spasm is more limited in tetanus; sometimes being most severe in the muscles of the face, producing lock-jaw; now it attacks the muscles of the trunk, on the fore part, producing *emprosthotonos*, and now the muscles of the back part, producing *opisthotonos*, or curvature of the trunk backwards. During all this, the natural temperature may remain, the pulse be perfectly natural, and the senses unimpaired. Under the most active and varied treatment, tetanus has always been a very fatal malady.

Catalepsy is a universal spasmodic disease of the organs of locomotion. The body remains in the position in which it may have been when attacked with the fit, and the limbs preserve any situation in which they may be placed. The senses are obliterated, and the mind totally inactive, nothing being able to rouse the patient. The pulse and temperature remain natural. The fit is of uncertain length; according to some writers, not lasting more than a quarter of an hour, though known by others to be much longer. This disease is an obstinate one, and is very liable to recur, even when the patient seems in the least respect liable to a recurrence. It is, for the most part, a consequence of some other disease. This may be a local affection; but it more frequently occurs in a generally enfeebled constitution, induced by some grave malady, or one which has been caused by the gradual operation of unobserved morbid causes.

CATALOGUES OF BOOKS. See *Books, Catalogues of*, and *Bibliography.*

CATALONIA (anciently *Tarraconensis*); a pro-

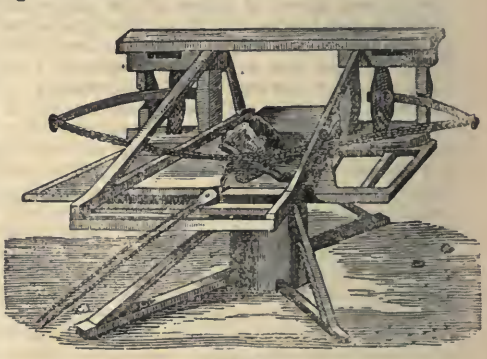
vince of Spain, bounded N. by France, E. and S. E. by the Mediterranean, S. W. by Valencia, and W. by Arragon. Its form is nearly that of a triangle, the base towards the Mediterranean being about 140 miles in length, the side towards France 120, and that towards Arragon 140. The country in general is mountainous, but intersected with fertile valleys, while the mountains themselves are covered with valuable woods and fruit-trees. Corn, wine, oil, flax, hemp, legumes, and almost every kind of fruit, are abundant. Here are quarries of marble of all colours, of crystal, and alabaster; also topazes, rubies, jaspers, and other precious stones; mines of lead, tin, iron, alum, vitriol, and salt, and, formerly, of gold and silver. On the coast is a coral-fishery. Catalonia is naturally much less fertile than either of the Castiles; but it far surpasses both, and, indeed, every other province in Spain, in the industry of its inhabitants, as well as the improvements which they have effected in manufactures, agriculture, and commerce. Population, 858,818; square miles, 12,111. It has usually been divided into fifteen vigueries or jurisdictions. The principal towns are Barcelona, Tortosa, Tarragona, Gerona, and Villa Franca de Panades. See *Spain*.

CATAMENIA (derived from these two Greek words,—κατα, according to, and μην, the month); menses, the monthly discharge from the uterus of females, between the ages of fourteen and forty-five. Many have questioned whether this discharge arose from a mere rupture of vessels, or whether it was owing to a secretory action. There can be little doubt of the truth of the latter. The secretory organ is composed of the arterial vessels situated in the fundus of the uterus. The dissection of women who have died during the time of their menstruating proves this. Sometimes, though very rarely, women, during pregnancy, menstruate; and, when this happens, the discharge takes place from the arterial vessels of the vagina. During pregnancy and lactation, when the person is in good health, the catamenia, for the most part, cease to flow. The quantity a female menstruates at each time is very various, depending on climate and a variety of other circumstances. It is commonly, in England, from five to six ounces: it rarely exceeds eight. Its duration is from three to four, and sometimes, though rarely, five days. With respect to the nature of the discharge, it differs very much from pure blood. It never coagulates, but is sometimes grumous; and membranes like the decidua, are formed in difficult menstruations. In some women, it always smells rank and peculiar; in others, it is inodorous. The use of this monthly secretion is said to be, to render the uterus fit for the conception and nutrition of the fœtus; therefore girls rarely conceive before the catamenia appear, and women rarely after their entire cessation, but very easily soon after menstruation.

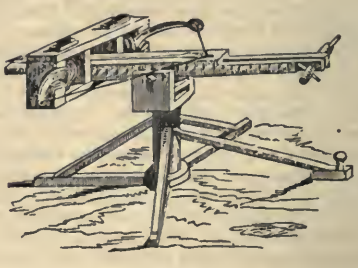
CATANIA (anciently *Catana*); a city of Sicily, in the valley of Demona, on the borders of the valley of Noto, the see of a bishop, the suffragan of Monreal; 47 miles S.S.W. Messina, 85 E.S.E. Palermo; lat. 37° 30′ N.; lon. 15° 0′ E. The population is variously estimated at from 40 to 80,000. It is situated on a gulf of the Mediterranean, at the foot of mount Ætna. This city has been repeatedly visited by tremendous earthquakes, and was laid in ruins by one in 1693, when 18,000 people were destroyed; and upon the situation which it occupied, the present city is built; the lava serving, at the same time, for a foundation, as well as a quarry, from which stone was dug for its construction. Catania is reviving with great splendour, and has much more the features of a metropolis and royal residence than Palermo. The principal streets are wide, and well paved with lava. Most of the edifices have an air of magnificence unknown in other parts of the island, and the town has a title to rank among the elegant cities of Europe. Here is a university with three faculties, much celebrated in Sicily. The inhabitants have always been noted for their superiority over the other Sicilians in politeness. The Benedictine convent of St Nicholas is very large. Every part has been rebuilt since the earthquake of 1693. An obelisk of red granite, placed on the back of an antique elephant of touchstone, stands in the centre of the great square, which is formed by the town-hall, seminary, and cathedral. The cathedral, dedicated to St Agatha, the patroness of the city, has suffered so much by earthquakes, that little of the original structure remains. The other religious edifices are profusely ornamented, but in a bad taste. The harbour, though one of the largest in the island, is not much frequented; but the trade is considerable. The exports are wheat, barley, wine, oil, &c.

CATAPLASMS, or POULTICES, are soft compounds, intended to be applied to the surface of the body. They are commonly made of meals, powders, boiled pulps, &c., mixed with water, milk, or some other liquid. They are called *sinapisms* when mustard forms their base.

CATAPULTS (Latin, *catapultæ*; Greek, καταπέλται); certain machines of the ancients, for projecting missiles, chiefly large beams of wood and heavy stones. *Balistæ* were engines somewhat similarly constructed, but were chiefly confined to the shooting of arrows.



Catapulta.



Balista.

They may be described as gigantic cross-bows, the most powerful of which consisted not of a single beam or spring, but of two, inserted each into an upright coil of ropes, so twisted, that the ends of the arms could not to be drawn towards each other, without producing a most violent recoil.

Pliny ascribes the invention of catapults to the Syrians; Plutarch and Diodorus, to other nations. At

the siege of Jerusalem, the Romans had 300 catapults and 40 balistæ. The Romans did not carry all the parts of these machines with them, but only the ropes and fastenings, with the necessary tools; and the soldiers built the catapults when they wanted them. The terms *catapult* and *balista* were often used indiscriminately; and, in later times, the word *catapult* went entirely out of use. Vegetius and Ammianus Marcellinus never introduce it, and employ *balistæ* to signify all machines throwing large arrows or beams, and *onager* for those throwing stones.

CATARACT. By this term two very different diseases are designated by some writers, viz. the true *cataract*, and *amaurosis*, or *gutta serena*. By the first of these terms, in its most common signification, is understood opacity of the crystalline lens, or its capsule, or both. By the second is meant a disease of the retina, by which it is rendered unsusceptible of the action of light. In cataract, the lens becomes opaque, loses its transparency, and is no longer capable of transmitting the light. The causes of cataract are numerous. Inflammation may produce it. Sometimes it is ascribed to a state of the vessels of the part which prevents a proper nourishment of the lens or its capsule. It is produced by various diseases, such as gout, rheumatism, scrofula, and accompanies old age. Its earliest approach is marked by a loss of the natural colour of the pupil; this becoming turbid, or slightly grey. *Muscæ volitantes* accompany this period. The opacity is not, at first, over the whole crystalline, and, most frequently, first attacks the centre portion; this being turbid, and of a greyish colour, while the surrounding portions remain transparent, and of the usual black colour. While it exists in this degree only, the person can see in an oblique direction. The colour of the pupil is various; mostly greyish-white or pearl-coloured; sometimes milk-white, or of a yellowish-grey; now and then of a greyish-brown, and even of a dark-brown or dark-grey. The consistence of the lens differs in different cases, being either hard, and even horny, or very soft, as if dissolved.

The treatment of cataract is by a surgical operation on the eye, and different operations have been tried and recommended. They all consist in removing the diseased lens from its situation opposite the transparent cornea. By one of these operations, the cataract is *depressed*, removed downwards, and kept from rising by the vitreous humour. This is called *couching*. Another operation is *extraction*, and consists in making an incision of the cornea, and of the capsule of the lens, by which the lens may be brought forward, and through the cut in the cornea. The third operation is by *absorption*. This consists in wounding the capsule, breaking down the crystalline, and bringing the fragments into the anterior chamber of the eye, where they are exposed to the action of the aqueous humour, and are, at length, absorbed. This last operation has the name *keratonyxis* applied to it. The choice of the operation is determined by the character of the cataract. After the operation, the patient is to be kept from the light, and from all means of irritation. Such medicines and such articles of food are to be prescribed as will most effectually prevent inflammation; and should this occur, it must be treated by such means, as are the most sure to restrain or overcome it.

Amaurosis is a disease of the optic nerve, and its continuation, the retina. Its causes are numerous. It may be occasioned by organic disease of the parts referred to, by mechanical pressure upon the nerve, by too powerful light, by long-continued use of the eyes in too weak light, by rapid transition from darkness to light, and, finally, by old age. Various other, and some more general causes may produce amaurosis. Among these are wounds of the head, compression of the brain, fits of apoplexy, suppressed colds in the head, habitual inebriety, vomiting, coughing, sneezing, affections of the alimentary canal and some of the neighbouring viscera—the liver, for example. According to the activity of these various causes, the malady comes on suddenly or gradually. The patients are sometimes unable to bear the light, and, therefore, seek the darkness, where sparks and flames frequently appear to their eyes. Objects sometimes appear of different colours, or fluctuate, swim, and confuse themselves. At other times, the patients begin to squint, suffer a severe pain in the ball of the eye, and a straining above the eyebrows: finally, they begin to see as if through a crape or fog, and only in bright daylight can distinguish accurately: black flakes and specks appear to hover before their eyes. The greatest insensibility of the retina is often opposite the centre of the cornea; but ultimately the disease produces total blindness, the pupil losing its motion, and becoming permanently dilated. Deep in the eye a white speck is often visible, which is traversed by veins. According to the different causes, the malady is either easily cured or is incurable. Regard is especially to be had to them in the selection and use of remedies.

CATARACT, in geography (from the Greek καταῤῥακτης). The English language has more words than most European languages, to express different degrees of rapid and sudden descent in streams of water. The most general term is *falls*. A considerable declivity in the bed of a river produces rapids; when it runs down a precipice, it forms a cataract; and, if it falls from steep to steep, in successive cataracts, it is often called a *cascade*. In primary and transition countries, rivers abound in rapids: they also sometimes occur in secondary regions, but the descent is always more gentle. In alluvial districts, falls, of course, are very rare: they are almost always found in the passage of streams from the primitive to the other formations: thus falls are found where the alluvial formations, on the coast of America, border on the primitive formations; but none are found in the alluvion below. Rapids and cataracts are often the greatest blessing to rugged countries, since they furnish the cheapest means to move maschines in manufactories, &c. In flat countries, as Holland, the lower part of Germany, and the West Indies, people must resort to windmills, on account of the want of falls.

Many cataracts are remarkable for their sublimity; and the falls of *Niagara* surpass all others of the known world in grandeur. The whole mass of water which empties itself from the great inland seas of North America is here compressed into a channel of three quarters of a mile in width, and plunges over a precipice of 150 to 160 feet in height. The river, more than a mile above the falls, is divided by Grand and Navy islands, and has a gradual descent of fifty-seven feet from this place. The banks preserve the level of the country, and, in some parts, rise 100 feet from the water: the whole stream is covered with foam and waves. At the grand falls, the river is three quarters of a mile broad, and the precipice curves nearly in a semicircle, extending in the longest line on the American or eastern side. An island, called Goat island, divides the cataract into two principal portions—the American fall on the east, and the Horse-shoe on the west, or Canada side. A small portion of the fall on the American side is cut off by a small island on the precipice: the rest descends in one body almost perpendicularly, from a height of 164 feet, and 1000 feet in width. Both the falls on the American side are crossed by bridges. The Horse-shoe fall is fourteen feet less in height, but

surpasses the other much in grandeur. The great body of the water passes the precipice with such force, that it forms a curled sheet, which strikes the water below fifty feet from the base of the precipice, and visitors can pass behind the sheet of water. The best view of this cataract is from Table rock. It is frequently adorned with a rainbow. Sometimes three are seen in the clouds of spray, which rise 100 feet above the precipice.

The river *Montmorency* forms a cataract 250 feet in height and fifty feet in breadth; nine miles below Quebec.

The falls of the river *Chaudière*, not far from the cataract just mentioned, are about 100 feet in height.

The *Mississippi* forms a cataract of forty feet in height, above its junction with the Ohio. The stream is 700 feet in width, and the surrounding country level.

The *Missouri*, at a distance of 500 miles from its sources, descends 360 feet in eighteen miles. There are three principal cataracts; one of eighty-seven, one of forty-seven, and one of twenty-six feet in height. The river is 1000 feet broad, and the whole scene is described as most beautiful.

The falls of *Passaic*, in New Jersey, at Patterson, about fifteen miles from Newark, are among the most celebrated of the United States. The river is 150 feet broad, and falls, in one entire sheet, into a chasm seventy feet in depth, and twelve wide. Its waters form the moving power for one of the most manufacturing districts of the United States.

The *Mohawk* river, near its junction with the Hudson, forms the falls termed the *Cohoes*, about sixty feet high.

The *Housatonic* river, in the north-west of Connecticut, forms the finest cataract in New England.

In Georgia, the cataract in the *Tuccoa* creek is interesting. It passes through a channel twenty feet wide, over a precipice of 187 feet, in one sheet, if the season is wet.

A similar cataract occurs in the river *Ache*, in Bavaria; falling 200 feet, by five steps, and being entirely scattered in spray. Its noise is heard at a distance of several miles.

Bellows falls, on the Connecticut river, near Walpole, are grand and striking.—*Glen's falls*, in the Hudson river, are similar.

The highest cataract in America is that of *Tequendama*, in the river Bogota, or Funza, a branch of the Magdalena. The river rises in the lofty plain, in which Bogota is situated, 9000 feet above the sea, and is precipitated into the lower country, through deep ravines and over steep precipices, and finally plunges 600 feet into a deep chasm.

The cataracts of the *Nile* (one at Syene, and the other some distance above) have been described, by Mr Bruce, as grand, principally from the wildness and desolation of the scene; but the highest of them does not exceed forty feet in height.

The primary regions of Europe abound in cataracts. The torrents are seldom of great size, but the rocky beds over which they roar and dash in foam and spray, the dark glens into which they rush, and the wildness of the whole scenery, often produce awful emotions.

The most remarkable cataract in Scotland is the *Fyers*. The falls of the Clyde are also very impressive and beautiful. See the articles *Fyers* and *Clyde* for more particular notices of them.

The river Gotha has a fall of celebrity at *Trolhatta*, in Sweden. It descends 100 feet.

One of the most considerable falls in Europe has lately been discovered in the river *Lattin*, in Swedish Lapland. It is described as half a mile in width, and 400 feet in height.

Another, of immense size, has been discovered by Mr Esmark, in the river *Maamelven*, in Norway, consisting of three separate falls, the whole height being 800 feet.

The Alpine highlands in Europe, abound in beautiful falls. The cataract near *Schaffhausen* is 400 feet broad and 70 high.

The river *Orco*, descending from mount Rosa into Italy, forms a cascade; the height of which is estimated at 2400 feet.

The fall of the *Evanson*, flowing from the same mountain, is stated to be 1200 feet high.

At *Staubbach*, in the canton of Bern, in Switzerland, a small stream descends a height of 1400 feet.

In Italy, the falls of *Terni* and *Tivoli* are beautiful, and were celebrated even among the ancients.

At Terni, about forty-five miles north of Rome, the *Evelino* plunges over a precipice of marble rocks, 300 feet high. The waters contain lime, which produces many petrifactions.

At Tivoli, eighteen miles north-east of Rome, are the falls of the *Anio* or *Teverino*, a branch of the Tiber. It falls nearly 100 feet deep.

A comparative view of the principal cataracts in the world, and a specification of their heights, will be found in Plate XVI.

CATARRH (from καταρρεω, I flow down); an increased secretion of mucus from the membranes of the nose, fauces, and bronchia, accompanied with fever, and attended with sneezing, cough, thirst, lassitude, and want of appetite. There are two species of catarrh, viz., *catarrhus à frigore*, which is very common, and is called a *cold in the head*; and *catarrhus à contagio*, the influenza, or epidemic catarrh, which sometimes attacks a whole city. Catarrh is also symptomatic of several other diseases. It is seldom fatal, except in scrofulous habits, by laying the foundation of phthisis; or where it is aggravated, by improper treatment, or repeated exposure to cold, into some degree of peripneumony; when there is hazard of the patient, particularly if advanced in life, being suffocated by the copious effusion of viscid matter into the air-passages. The epidemic is generally, but not invariably, more severe than the common form of the disease. The latter is usually left to subside spontaneously, which will commonly happen in a few days, by observing the antiphlogistic regimen. If there should be fixed pain of the chest, with hardness of the pulse, a little blood may be taken from the arm, or topically, followed by a blister; the bowels must be kept regular, and diaphoretics employed, with demulcents and mild opiates, to quiet the cough. When the disease hangs about the patient in a chronic form, gentle tonics and expectorants are required, as myrrh, squill, &c. In the epidemic catarrh, more active evacuations are often required, the lungs being more affected; but, though these should be promptly employed, they must not be carried too far, the disease being apt to assume the typhoid character in its progress; and as the chief danger appears to be, that suffocation may happen from the cause above mentioned, it is especially important to promote expectoration, first by antimonials, afterwards by squill, the inhalation of steam, &c., not neglecting to support the strength of the patient as the disease advances.

CATECHESIS; the science which teaches the proper method of instructing beginners in the principles of the Christian religion by question and answer, which is called the *catechetical method*. (See *Method*.) Hence *catechist* and *catechise*. The art of the catechist consists in being able to elicit and develope the ideas of the youthful minds of learners. This part of religious science was first cultivated in mo-

dern times, and Rosenmuller, Dinter, Schmid, Wolrath, Doltz, Graffe, Daub, Winter, Heinrich Muller, and others, have particularly distinguished themselves by their writings upon it.

CATECHETICAL SCHOOLS; institutions for the elementary education of Christian teachers, of which there were many in the Eastern church from the second to the fifth century. They were different from catechumenical schools, which were attached to almost every church, and which were intended only for the popular instruction of proselytes, and of the children of Christians; whereas the catechetical schools were intended to communicate a scientific knowledge of Christianity. The first and most renowned was established about the middle of the second century, for the Egyptian church at Alexandria, on the model of the famous schools of Grecian learning in that place. (See *Alexandrian School.*) Teachers like Pantænus, Clement, and Origen, gave them splendour and secured their permanence. They combined instruction in rhetoric and oratory, in classical Grecian literature, and the Eclectic philosophy, with the principal branches of theological study, exegesis, the doctrines of religion, and the traditions of the church; distinguished the popular religious belief from the Gnosis, or the thorough knowledge of religion; established Christian theology as a science, and finally attacked the dreams of the Chiliasts (believers in a millennium); but, by blending Greek speculations and Gnostic phantasies with the doctrines of the church, by an allegorical interpretation of the Bible, and the assumption of a secret sense in the Scriptures, different from the literal, contributed to the corruption of Christianity. The distraction of the Alexandrian church by the Arian controversies proved the destruction of the catechetical schools in that place, about the middle of the fourth century. The catechetical school at Antioch appears not to have been a permanent institution, like the Alexandrian, but only to have been formed around distinguished teachers, when there happened to be any in the place. There were some distinguished teachers in Antioch, about the year 220. We have no certain information, however, of the theological teachers in that place, such as Lucian, Diodorus of Tarsus, and Theodore of Mopsuestia, until the latter part of the fourth century. These teachers were distinguished from the Alexandrian by more sober views of Christianity, by confining themselves to the literal interpretation of the Bible, by a cautious use of the types of the Old Testament, and by a bolder discussion of doctrines. The Nestorian and Eutychian controversies, in the fifth century, drew after them the ruin of the schools at Antioch. Of a similar character were the catechetical school instituted at Edessa, in the third century, and destroyed in 489, and the school afterwards established at Nisibis, by the Nestorians, in its stead; both of which were in Mesopotamia. To these catechetical schools succeeded, at a later date, the cathedral and monastic schools, especially among the Western Christians, who, as late as the sixth century, made use of the heathen schools, and had never established catechetical schools even at Rome. See *Schools*

CATECHISM; a book which contains the principles and first instructions to be communicated in any branch of knowledge, particularly in religion. In modern times, the word has been applied more freely than formerly. Thus we see catechisms of chemistry, history, and, in France, *catechism des gens de bon sens* (a satire), *catechism du bon ton*, &c. The word is derived from the Greek κατηχίω, I sound, i. e., into the ears of the person to be instructed. The word, however, is chiefly used to denote the books that contain the religious instruction which any sect deems most important to be taught to the children and the people, in a popular and easy form, generally in the form of question and answer. In the Catholic church, each bishop has the right to make a catechism for his diocese. But, in modern times, their catechisms are generally a pretty close copy of the one drawn up by the council of Trent, of which an English translation was published in London (1687), "*permissu superiorum*," under the patronage of James II. Among Protestants, the catechism of Luther acquired great celebrity, and still continues to be used by many clergymen in Germany, where regular instruction in religion, during a certain period prescribed by law, must precede the confirmation, which takes place between the thirteenth year of age and the seventeenth. Clergymen, however, in some parts of that country, have been allowed to publish and use their own catechisms; and it is a matter of no little interest, to observe how the many different philosophical schools of Germany have influenced the tone of the catechisms by their various systems of morals, &c. Some, which we have seen, were books of 300 pages, and rather philosophical systems, supported by numerous quotations from the Bible, than simple catechisms. Such catechisms, however, are going out of use.

The catechetical mode of giving instructions in Christianity had much declined previous to the reformation, when it was revived, and numerous catechisms sprung up. The proper preparation of such manuals, the communication of religious and moral instruction in a short compass and a simple form, is a thing of no small difficulty. In England, soon after the reformed religion was established there, a short catechism was introduced, consisting of the creed, the Lord's prayer, and the decalogue, to which a few cautious, explanatory passages were added, about 1549, it is supposed by archbishop Cranmer. "A Shorte Catechisme or Playne Instruction, conteynynge the Summe of Christian Learninge, sett fourth by the King's Maiesties Authoritie for all Scholemaisters to teach," was the work which closed the labours of the reformers in the reign of Edward VI., whose name it commonly bears. It was printed both in Latin and in English, in 1553, and may fairly be considered as containing the sense of the church of England then established. The catechism of the English church now in use is drawn up, after the primitive manner, by way of question and answer. The questions and answers relative to the sacraments were subjoined to it, at the revision of the liturgy, in the first year of James I. As now extant, it consists of five parts, viz.: 1. the doctrine of the Christian covenant; 2. the articles of belief; 3. the commandments; 4. the duty and efficacy of prayer; and 5. the nature and end of the holy sacraments.

The catechism of the church of Scotland is that agreed upon by the Assembly of Divines at Westminster, with the assistance of commissioners from the church of Scotland, and approved of by the General Assembly in the year 1648. What is called the Shorter Catechism, is merely an abridgment of the Larger, and is the one in most common use.

Calvin wrote a catechism, as Luther did; but that of the former has not enjoyed so much popularity, nor been translated into so many languages, as that of the latter.

In France, the catechisms of later times exhibit plain marks of political influence. The catechism of Napoleon, in its tenth chapter, explicitly states in what light he and his family were to be regarded. This celebrated chapter has generally been thought scandalous, though it was approved, after a fashion, by the papal nuncio. Most of the catechisms published since 1814 are equally scandalous, because

they contain illegal, nay, anti-constitutional, precepts. When the complaints on this score became too loud to be disregarded, the pitiful excuse was made, that the offensive turn of the passages was owing to errors of the press.

CATECHU (*terra Japonica*); an extract prepared from the wood and the green fruit of the *mimosa catechu* (Lin.), and of several other trees of the same family, which grow in the East Indies, principally in Bengal. There are three sorts of catechu. The first, *Bombay catechu*, is in square pieces, of a reddish-brown colour, friable, of a uniform texture, fracture uneven, of a specific gravity of about 1·39. The second, *Bengal catechu*, is in round pieces, of the weight of three or four ounces, of a deep chocolate colour internally, and resembling iron rust externally, more friable, of the specific gravity of 1·28. The third kind, *catechu in masses*, is in irregular pieces of two or three ounces, of a reddish-brown colour, shining, homogeneous, and wrapped up in large-nerved leaves. These three kinds of catechu are inodorous, of an astringent taste at first, but, soon after, sweet and agreeable; at least this is the case with the first and last sort. Catechu is one of the best astringents to be found in the *materia medica*, and likewise one of the most in use.

CATECHUMENS is a name which was applied to those converted Jews and heathens, in the first ages of the church, who were to receive baptism, had a particular place in the church, but were not permitted to be present at the celebration of the sacrament. Afterwards, it was applied to those young Christians who, for the first time, wished to partake of this ordinance, and, for this purpose, went through a preparatory course of instruction.

CATEGORY, in logic; an assemblage of all the beings contained under any genus or kind, ranged in order. The school philosophers distribute all beings, all the objects of our thoughts or ideas, into certain genera or classes, which classes the Greeks call *categories*, and the Latins, *predicaments*, and which Mr Harris has styled *philosophical arrangements*. The ancients, following Aristotle, generally make ten categories. Under the first all substances are comprised, and all accidents or attributes under the nine last, viz., *quantity*, *quality*, *relation*, *action*, *passion*, *time*, *place*, *situation*, and *habit*. This arrangement, however, is arbitrary, and now almost excluded. Accordingly, some philosophers think that all nature may be better considered under these seven divisions—*spirit*, *matter*, *quantity*, *substance*, *figure*, *motion*, and *rest*. Others make but two categories, *substance* and *attribute*, or *subject* and *accident*; or three, accident being divided into the *inherent* and *circumstantial*. The arrangement of the ten categories was borrowed from the Pythagorean school. It is said to have been invented by Archytas of Tarentum. From him it passed to Plato (who, however, admitted only five categories—*substance*, *identity*, *diversity*, *motion*, and *rest*), and from Plato to Aristotle. The Stoics held four—*subjects*, *qualities*, *independent circumstances*, *relative circumstances*. For the categories of Kant, see *Kant*.

CATENARY; that curve in the higher geometry which is formed by a chain or cord when allowed to hang freely between two points. A knowledge of the properties of this curve is of essential service to the civil engineer, since it has been found the best suited for domes, and is also the curve assumed by the chains of a suspension bridge. This curve is, besides, remarkable in being the line of swiftest descent; that is, any body being allowed to fall to the earth through this curve, will descend in a shorter time than it would have done in any other line whatever from the same height. This fact was taken advantage of some years since by Mr Rupp of Wirtemberg, who constructed a slide on the face of a high and rocky eminence on the banks of the lake Lucerne. On the top of this acclivity was an immense forest of fir trees, which were of no use on account of the impossibility of conveying them to a marketable place. The individual above mentioned constructed a slide or trough of wood in the form of the catenary curve, extending from the forest to the lake, a distance of eight miles, down which slide, the trees, when cut and squared, are launched; and such is the rapidity with which the logs move, that they descend from the top to the bottom of the slide in six minutes, the workmen being warned by telegraphic signals. The trees are thence conveyed with facility to the German ocean. An interesting description of this slide is given by Professor Playfair.

CATERPILLAR. See *Papilio*.

CATGUT. The strings of certain musical instruments, the cords of clock-weights, and those of some other machines and implements, are made of a dense, strong animal substance, denominated *catgut*. It is made from the intestines of different quadrupeds, particularly those of cattle and sheep. The manufacture is chiefly carried on in Italy and France. The texture from which it is made is that which anatomists call the *muscular coat*, which is carefully separated from the peritoneal and mucous membranes. After a tedious and troublesome process of steeping, scouring, fermenting, inflating, &c., the material is twisted, rubbed with horse-hair cords, fumigated with burning sulphur, to improve its colour, and dried. Cords of different size, and strength, and delicacy, are obtained from different domestic animals. The intestine is sometimes cut into uniform stripes, with an instrument made for the purpose. To prevent offensive effluvia during the process, and to get rid of the oily matter, the French make use of an alkaline liquid, called *eau de Javelle*. Catgut for stringed instruments, as violins and harps, is made principally in Rome and Naples. For the smallest violin strings, 3 thicknesses are used; for the largest, 7; and, for the largest bass-viol strings, 120. In the kingdom of Naples, whence the best strings, commonly called *Roman*, are obtained, there are large manufactories of this article.

CATHARI; a denomination which was applied, from the middle of the eleventh to the thirteenth century, to several parties and sects, that appeared first in Lombardy, and afterwards in other countries of the West, and which were violently persecuted, on account of their Manichean tenets and usages. As they originated in Bulgaria, they were sometimes termed *Bulgarians*, whence arose the French term of abuse, *Bougres*. Sometimes, in token of their contemptibleness, as men of the lowest class, they were called *Patarenes*, or *Patarines*, from Pataria, a region of bad reputation near Milan; sometimes *Publicans*, or *Popelites*, and, in the Low Countries, *Piphles*. But the most general name, by which they were denoted, in the middle ages, was *Cathari* (either from καθαρὸς, the pure, which they claimed to be, or from the national appellation *Chazars*, because they were said to have proceeded from Chazary, the present *Crimea*; whence *ketzer*, the German word for *heretics*).

The religious views and practice of the sects comprehended under this name differed much, according to the age and country in which they appeared, and according to the spirit of their leaders; but they all agreed in an obstinate resistance to Catholicism, and in the following points of doctrine and religious life:—In common with the old Manicheans, but without esteeming Manes a prophet, they entertained an aversion to the mixture of Judaism in Christianity

professed the dualism couched in scriptural language, which places the devil nearly on a level with God, and entertained the conceit of a high moral perfection. The influence of Arian and Platonic notions was conspicuous in their explanations of the doctrine of the Trinity, which defined the Father to be the unity of the divine will, the Son, or Logos, to be his first thought, and the Spirit to be their common operation. In every good man they saw a Christ, and, therefore, in their congregations, separated the elect from the novices. The merit of the Redeemer they believed to consist more in his example than in his expiatory death, and built their hopes of happiness, for the consummation of which a resurrection of the body did not appear to them requisite, on their own virtue. They regarded the exaltation of the soul over the mortal nature, so as to become wholly absorbed in mystical contemplation, as the highest stage in t.e religious life of man. They despised the mass, the service of the altar, and similar ceremonies, as mere vanity. The adoration of the cross, of saints, and relics, together with all arbitrary penances and good works, so called, they deemed idle superstition. The daily blessing of their meats and drinks they esteemed equivalent to the celebration of the eucharist. The imposition of the hands of spotless teachers served for the communication of the Spirit, for baptism, and as a pledge of the forgiveness of sins. Deep devotion of the heart in prayer, and a life of purity, connected with abstinence from sexual pleasure, and from the use of stimulating food, were their exercises of piety. The tenets of popery, and the whole establishment of the Catholic priesthood, as it then existed, they looked upon as unchristian and pernicious. They insisted on the restoration of the apostolic simplicity, and the literal fulfilment of the precepts of the New Testament, which they read, indeed, with assiduity, but frequently misunderstood. In an age when the heartless subtilties of dialectics, the mechanical administration of divine worship, and the scandalous morals of the clergy, widened more and more the breach between religion and the established church, such doctrines and maxims necessarily met with approbation, on account of their opposition to the prevalent practices.

The piety and morality at which most of the separatists diligently aimed, the charm of their secret connexion, and the high intelligence of things sacred to which they made claim, the warmth of their mysticism, and the moving power of their simple worship, procured them many adherents, and those not from the common people merely. They were joined by the discontented of all classes, even by the clergy and nobles; whence they were called, in France, *bons hommes*, good, i. e. noble, people; and, in the rude state of the existing political constitutions, amid the confusion of civil wars and ecclesiastical controversy, their congregations, with little mutual connexion, and not menacing the state with danger, were able to pursue with impunity, for years, their quiet course. But these sects were not free from corruptions. The nocturnal assemblies, the community of goods, the homeless, roving life (on account of which several of them were called *Passageri*, *Passagini*), and the contempt of the marriage state, which originated in ascetic views, gave rise, in many cases, since they permitted the two sexes to live together, to gross immoralities; and the mystery, in which they enveloped their religious exercises, sometimes served to conceal the errors of an unbridled fanaticism. But, when the old denominations became disgraced by such errors, new leaders, and reforms in doctrine and life, gave rise to new sects, and imparted a fresh impulse to the once excited spirit of separation. From this originated the excitements occasioned among the people of France, Switzerland, and Italy, by Peter Bruys, and Henry and Arnold of Brescia, in the twelfth century, which introduced the names *Petrobrusians*, *Henricians*, and *Arnoldists*. See *Arnold of Brescia*.

The ecclesiastical authority now became zealous in searching out and punishing heretics; so that these new, but unconnected, classes of Cathari soon became extinct. The older Cathari, Publicans, Patarenes, &c., had the prudence, wherever they were settled, to adhere publicly to the Catholic church, and to hold their private meetings in the night. They even allowed the persecuted members to have recourse, before the spiritual courts, to an apparent recantation; but, the attention of these authorities being once excited, and the popes carrying on the persecution of the heretics by their own legates, and establishing the horrible inquisition in the thirteenth century, the most blameless life, and the utmost secrecy in the performance of religious exercises, no longer afforded security to these heterodox believers. The fate of the Albigenses (q. v.), who were mainly Cathari, finally produced the overthrow of all this family of sects in the thirteenth century. The Waldenses (q. v.) alone, who were unjustly confounded with the Cathari, escaped. No sects, of a later origin, have borne this general appellation.

CATHARINE, ST; a virgin of Alexandria, who, according to Catholic tradition, suffered martyrdom under Maximin, about A.D. 236. She is represented with a piece of a wheel; and the legend of her marriage with Christ has been painted by several of the first masters. Correggio's *Catharine*, in Dresden, is beautiful.—There are two other St Catharines mentioned.—The knights of St Catharine on mount Sinai are an ancient military order, instituted for the protection of the pilgrims who came to visit the tomb of St Catharine, on this mountain. In Russia, the order of St Catharine is a distinction for ladies, instituted by Catharine, wife of Peter the Great, in memory of his signal escape from the Turks in 1711.

CATHARINE OF FRANCE, queen of England youngest child of Charles VI. and Isabella of Bavaria, was born in 1401, and, in 1420, was married to Henry V. of England, who was then declared successor to the crown of France. To this prince she bore Henry VI., crowned in his cradle king of both countries. After the death of Henry, Catharine privately married Owen Theodore, or Tudor, a Welsh gentleman of small fortune, but descended from the ancient British princes. By this marriage she had two sons, the eldest of whom, Edmund, earl of Richmond, by a marriage with Margaret Beaufort, of the legitimated branch of Lancaster, became father of Henry VII., and founder of the house of Tudor. Catharine was treated with some rigour, on the discovery of her second marriage, and died in the prime of life, in 1438.

CATHARINE OF ARRAGON, queen of England, the youngest daughter of Ferdinand of Arragon and Isabella of Castile, was born in 1483. In 1501, she was married to Arthur prince of Wales, son of Henry VII. Her husband dying about five months after, the king, unwilling to return her dowry, caused her to be contracted to his remaining son Henry, and a dispensation was procured from the pope for that purpose. In his fifteenth year, the prince made a public protest against the marriage; but, at length, yielding to the representations of his council, he consented to ratify the contract, and, on his accession to the throne, in 1509, was crowned with her. The inequality of their ages, and the capricious disposition of Henry, were circumstances very adverse to the durability of their union, and it seems surprising that

Catharine should have acquired and retained an ascendency over the affections of the king for nearly twenty years. The want of male issue, however, proved a source of disquietude to him, and scruples, real or pretended, at length arose in his mind concerning the legality of their union, which were greatly enforced by a growing passion for Anne Boleyn, one of the queen's maids of honour. He speedily made application to Rome for a divorce from Catharine. An encouraging answer was returned, and a dispensation promised, it being the interest of the pope to favour the English king. Overawed, however, by the power of the emperor Charles V., Catharine's nephew, the conduct of the pontiff, who depended upon the empire, became embarrassed and hesitating. Catharine, meanwhile, conducted herself with gentleness and firmness, and could not in any way be induced to consent to an act, which would render her daughter illegitimate, and stain her with the imputation of incest. Being cited before the papal legates, cardinals Wolsey and Campeggio, in 1529, she declared that she would not submit her cause to their judgment, but appealed to the court of Rome; which declaration was declared contumacious. The subterfuges of the pope at length induced the king to decide the affair for himself; and the resentment expressed on this occasion, by the court of Rome, provoked him to throw off his submission to it, and declare himself head of the English church—a result of royal caprice more curious and important than most in history. In 1532, he married Anne Boleyn; upon which Catharine, no longer considered queen of England, retired to Ampthill in Bedfordshire. Cranmer, now raised to the primacy, pronounced the sentence of divorce, notwithstanding which, Catharine still persisted in maintaining her claims. She died in January, 1536. Shortly before her death, she wrote a letter to the king, recommending their daughter (afterwards queen Mary) to his protection, praying for the salvation of his soul, and assuring him of her forgiveness and unabated affection. The pathos of this epistle is said to have drawn tears from Henry, who was never backward in acknowledging the virtues of his injured wife, who certainly acted with eminent dignity and consistency. Several devotional treatises have been attributed to Catharine, which belong to queen Catharine Parr.

CATHARINE DE MEDICI; wife of Henry II., king of France; born at Florence in 1519; the only daughter of Lorenzo de Medici, duke of Urbino, and the niece of pope Clement VII. Francis I. consented that his son Henry should marry her, only because he did not believe she ever would ascend the throne, and because he was in great want of money, which Lorenzo could furnish him. The marriage was celebrated at Marseilles in 1533. Catharine was equally gifted with beauty and talents, and had cultivated her taste for the fine arts in Florence; but, at the same time, imbibed the perverted principles of politics then prevailing in Italy, which justified a constant resort to cabal, intrigues, and treachery, and are particularly unsuited to the government of large empires. Catharine's ambition was unbounded. She sacrificed France and her children to the passion for ruling; but she never aimed steadily at one great end, and had no profound views of policy. The situation in which she was placed, on her arrival at the French court, gave her great opportunity to perfect herself in the art of dissimulation. She flattered alike the duchess d'Etampes, the mistress of the king, and Diana de Poitiers, the mistress of her own husband, though these two ladies hated each other. From her apparent indifference, she might have been supposed inclined to shun the tumult of public affairs; but, when the death of Henry II., in 1559, made her mistress of herself, she plunged her children in a whirl of pleasures, partly to enervate them by dissipation, partly from a natural inclination towards prodigality; and, in the midst of these extravagancies, cruel and bloody measures were executed, the memory of which still makes men shudder. Her authority was limited under the reign of Francis II., her eldest son, since this prince, by his marriage with the unfortunate Mary Stuart, was entirely devoted to the party of the Guises. Jealous of a power she did not exercise, Catharine then decided to favour the Protestants. If it had not been for her patronage, by which the ambition of the chiefs of the Huguenots was stimulated, the conflicting religious opinions in France never would have caused such lasting civil wars. Catharine felt herself embarrassed, by this indulgence towards the innovators, when the death of Francis II. placed the reins of government, during the minority of Charles IX., in her hands. Wavering between the Guises on one side, who had put themselves at the head of the Catholics, and Condé and Coligny on the other, who had become very powerful by the aid of the Protestants, she was constantly obliged to resort to intrigues, which failed to procure her as much power as she might easily have gained by openness of conduct. Despised by all parties, but consoled if she could deceive them; taking arms only to treat, and never treating without preparing the materials for a new civil war, she brought Charles IX., when he became of age, into a situation in which he must either make the royal authority subordinate to a powerful party, or cause part of his subjects to be massacred, in the hope, at best a doubtful one, of subduing faction. The massacre of St Bartholomew (see *Bartholomew, massacre of*) was her work. She induced the king to practise a dissimulation foreign to his character; and, as often as he evinced a disposition to free himself from a dependence of which he was ashamed, she knew how to prevent him, by the fear and jealousy which she excited in him by favouring his brother Henry. After the death of Charles IX., Catharine became again regent of the kingdom, till the return of Henry III., then king of Poland. She contributed to the many misfortunes of his reign, by the measures which she had adopted previously to its commencement, and by the intrigues in which she was uninterruptedly engaged. At her death, in 1589, France was in a state of complete dismemberment. The religious contests were, in reality, very indifferent to her. The consequences she was not able to conceive. She was ready to risk life for the gratification of her ambition. She was equally artful in uniting her adherents, and in promoting dissension among her adversaries. She was extravagant to folly, and was unable to limit her expenses. To those who directed her attention to the prodigal expenditure of the public treasure, she used to say, "One must live." Her example contributed greatly to promote the corruption of morals which prevailed in her time. Her manners, however, were elegant, and she took a lively interest in the sciences and arts. She caused valuable manuscripts to be brought from Greece and Italy, and the Tuilleries, and the Hotel de Soissons to be built. In the provinces, also, several castles were erected by her order, distinguished for the beauty of their architecture, in an age when the principles of the art were still unknown in France. She had two daughters, Elizabeth, married to Philip II. of Spain in 1559, and Margaretta (q. v.) of Valois, married to Henry of Navarre, afterwards Henry IV.

CATHARINE OF BRAGANZA, wife of Charles II., king of England, and daughter of John IV. king of Portugal, was born in 1638. In 1661, she married Charles II., in whose court she long endured all the

neglect and mortification his dissolute conduct was calculated to inflict upon her. This endurance was also rendered greater by her proving unfruitful; but she supported herself with great equanimity, and, after the death of Charles, received much attention and respect. In 1693, she returned to Portugal, where, in 1704, she was made regent by her brother, don Pedro, whose increasing infirmities rendered retirement necessary. In this situation, Catharine showed considerable abilities, carrying on the war against Spain with great firmness and success. She died in 1705, aged 67.

CATHARINE I., empress of Russia. The early history of this remarkable woman is uncertain. According to some accounts, she was the daughter of a Catholic peasant in Lithuania, by name *Samuel*, for he had (as is frequently the case there) no family name. It is said that she was born in 1686, named *Martha*, and placed, by her poor parents, in the service of a Lutheran clergyman, named *Daut*, at Roop, in the circle of Riga, where she imbibed the principles of the Protestant religion. She then removed to Marienburg, a small village in the circle of Wenden, and entered the service of a clergyman named *Gluck*, who caused her to be instructed in the Lutheran religion. Here she was married to a Swedish dragoon. But, a few days after, he was obliged to repair to the field, and the Russians, within a short period, took Marienburg, in 1702. Martha fell into the hands of general Scheremetjeff, who relinquished her to prince Menzikoff. While in his possession, she was seen by Peter the Great, who made her his mistress. She became a proselyte to the Greek church, and assumed the name of *Catharine Alexiewna*. In 1708 and 1709, she bore the emperor the princesses Anna and Elizabeth, the first of whom became the duchess of Holstein by marriage, and mother of Peter III. The second became empress of Russia. In 1713, the emperor publicly acknowledged her his wife. She was subsequently proclaimed empress, and crowned in Moscow. Besides the daughters above named, she bore the emperor five more children, all of whom died early. The princesses Anna and Elizabeth were declared legitimate. By her kindness, by her perseverance, and, above all, by her intelligence, she gained possession of the heart of the emperor. When Peter, with his army, seemed irreparably lost on the Pruth, in 1711, Catharine, in connexion with Ostermann and Schaffiroff, endeavoured to win over the grand vizier; and, having succeeded, by bribing his confidant with her jewels, she disclosed her plan to the emperor, who gave it his approbation, and was soon relieved. She afterwards received many proofs of the gratitude of her husband. (Her coronation, as empress, in Moscow, which some place in 1718, took place, according to Weber and Bergholz, in 1724). Peter even deemed her worthy of being his successor. But, in the latter part of 1724, she fell under his displeasure. Her chamberlain Mons, with whom Peter had found her *tête à tête*, was beheaded, on pretence that he had been bribed by the enemies of Russia; and she was obliged to view the head of Mons nailed to a gibbet. This, however, is only an anecdote, and the affair of Mons remains a mystery. Menzikoff, who had always manifested much attachment to her, had now been in disgrace for some time, and Peter had very frequent attacks of bodily pain, which were interrupted by dreadful explosions of rage. These circumstances made Catharine's situation critical, and her anticipations of the future must have been the more melancholy, as the emperor had uttered some threats of a change in the succession to her disadvantage. To prevent such an event, she applied to Menzikoff; and, by the prudence of Jaguschinski, who then enjoyed the favour of Peter, and whom she gained over, a reconciliation was effected with the emperor. The empress and the favourite were labouring to confirm their improving prospects, when Peter the Great died, Jan. 28, 1725. Catharine Menzikoff, and Jaguschinski considered it necessary to keep the death of the emperor a secret, until, by judicious arrangements, they had secured the succession of the throne to the empress. Theophanes, archbishop of Plescow, swore before the people and troops, that Peter, on his death-bed, had declared Catharine alone worthy to succeed him in the government. She was then proclaimed empress and autocrat of all the Russias, and the oath of allegiance to her was taken anew. At first, the cabinet pursued the plans of Peter, and, under Menzikoff's management, the administration was conducted with considerable ability. But the pernicious influence of favourites was soon felt, and great errors crept into the administration. Catharine died suddenly, on the 17th of May, 1727, in the forty-second year of her age. Her death was probably hastened by excess in the use of Tokay wine and ardent spirits.

CATHARINE II., empress of Russia, a woman of remarkable ability, was born at Stettin, April 25th, 1729, where her father, Christian Augustus, prince of Anhalt-Zerbst, and Prussian field-marshal, was governor. Her name was originally *Sophia Augusta*. The empress Elizabeth, at the instigation of Frederic II., chose her for the wife of Peter, her nephew, whom she appointed her successor. The young princess accompanied her mother to Russia, where she joined the Greek church, and adopted the name of *Catharine Alexiewna*, given to her by the empress. The marriage was celebrated Sept. 1st, 1745. It was not a happy one, but Catharine found recreation in the improvement of her mind. She was endowed with uncommon strength of character; but the ardour of her temperament, and the ill-treatment of her husband, led her into errors which had the most injurious influence on her whole political life. Amongst the friends of her husband, count Soltikoff was distinguished for talent and the graces of his person. He attracted the attention of Catharine, and an intimate connexion between them was the consequence. When Soltikoff, who was employed in foreign embassies, grew indifferent to Catharine, a young Pole, Stanislaus Augustus Poniatowski, celebrated both for his good and ill fortune, gained the affections of the grand princess. Their intimacy was known to the empress, but did not appear to displease her; and it was at her recommendation that Augustus III. appointed Poniatowski his ambassador at the court of St Petersburg. This connexion created alarm at Paris. France, at that time at war with Britain, had formed a secret treaty with Austria, and drawn Russia into the same. Poniatowski was known to be a warm adherent of Britain, and it was feared that, through his influence on the princess, he might prejudice Elizabeth against France; and Louis XV. endeavoured to induce the king of Poland to recall him. In the year 1761, Elizabeth died, and Peter III. ascended the throne. The emperor now became still more alienated from his wife. Peter lived in the greatest dissipation, and on such intimate terms with a lady of the court, named *Elizabeth Woronzoff*, that it was generally thought that he would repudiate Catharine, and marry his mistress. The empress, therefore, was obliged to take measures for her personal security. At the same time, Peter grew continually more and more unpopular with his subjects, owing to his blind predilection for the Prussian military discipline, his politics, and the faults of his character. This led to a conspiracy, at the head of which were the

hetman count Rasumowski, count Panin, the enterprising princess Daschkoff, and a young officer of the guards, Gregory Orloff, who, since Poniatowski's departure, had taken his place in Catharine's affections. All those who were dissatisfied, or who expected to gain by a change, joined this conspiracy. Panin and the greater part of the conspirators were actuated only by the desire to place the minor prince, Paul, on the throne, under the guardianship of the empress, and a council of the empire. But this plan was changed through the influence of the Orloffs. The guards were the first to swear allegiance to the empress, on her presenting herself to them at Peterhoff, on the morning of July 9, 1762; and Alexei Orloff prevailed on Teplow, who was afterwards appointed senator, to read, at the Kazan church, instead of the proclamation of the conspirators in favour of the young prince, one announcing the elevation of Catharine to the throne. Peter died, a few days after, in prison. The accusation against Catharine, of having contributed to hasten this event, is without foundation. The young, ambitious princess, neglected by her husband, whom she did not respect, remained passive on the occasion, yielded to circumstances, which were, it is true, propitious to her, and consoled herself for an event which she could not remedy. She knew how to gain the affections of the people by flattering their vanity; showed great respect for their religion; caused herself to be crowned at Moscow with great pomp; devoted herself to the promotion of agriculture and commerce, and the creation of a naval force; improved the laws, and showed the greatest activity in the administration of the internal as well as the external affairs of Russia. A year after her ascension to the throne, she forced the Courlanders to displace their new duke, Charles of Saxony, and to recall Biren, who was extremely odious to the nobles. After the death of Augustus III., king of Poland, she was the means of Stanislaus Poniatowski's being crowned at Warsaw. But, whilst she was forcing this king on the Poles, the number of the malcontents in her own empire increased, and several attempts against her life were made at St Petersburg and Moscow. The young Ivan (q. v.) was the person to whom the hopes of the conspirators were directed; but his sudden death, at the fortress of Schlusselburg, overthrew the plans of the disaffected. After this, the court of the empress was only disturbed, from time to time, by intrigues, in which gallantry and politics went hand in hand, and which had no other object than to replace one favourite by another. In the midst of pleasure and dissipation, Catharine did not neglect the improvement of the laws. Deputies from all the provinces met at Moscow. The empress had herself prepared instructions for their conduct, which were read at the first session; but it was impossible for so many different nations to understand each other, or to be subject to the same laws. In the first sessions, the emancipation of the peasants was proposed. This alone would have been sufficient to cause a bloody revolution. Catharine, who presided at the debates, and received from the assembly the title of *mother of the country*, soon dismissed the discordant legislators. About this time, France formed a party in Poland against Russia; but these attempts only served to accelerate Catharine's plans. The war to which the Porte was instigated had the same result. The Turks were beaten. The Russian flag was victorious on the Greek seas; and on the banks of the Neva, the plan was formed of re-establishing the republics of Sparta and Athens, as a check to the Ottoman power. The advancement of Austrian troops into Poland inspired Catharine with the desire to aggrandize herself in this quarter. She therefore entered into an agreement for the division of the country with the courts of Berlin and Vienna in 1772, by which the governments of Polotzk and Mohilow fell to her share, and she ensured to herself exclusive influence in Poland, by undertaking to guarantee the Polish constitution. At the same time, she abandoned all her conquests, with the exception of Azoph, Taganrog, and Kinburn, in the peace with the Porte, concluded at Kainardschi in 1774, but secured to herself the free navigation of the Black sea, and stipulated for the independence of the Crimea. By this apparent independence, the Crimea became, in fact, dependent on Catharine. This peace was as opportune as it was advantageous to Russia; for, in the third year of the war, Moscow and several other cities were desolated by the plague; and, about the same time, an adventurer, named *Pugatscheff*, assuming the name of *Peter III.*, had excited a revolt in several provinces of Eastern Russia. At this time, Potemkin exercised an unlimited influence on the empress. In 1784, he succeeded in conquering the Crimea, to which he gave its ancient name of *Tauris*, and extended the confines of Russia to the Caucasus. Catharine, upon this, traversed the provinces which had revolted under Pugatscheff, and navigated the Wolga and Borysthenes, taking greater interest in the expedition, as it was connected with some danger. She was desirous, likewise, of seeing Tauris. Potemkin turned this journey, which took place in 1787, into a triumphal march. Throughout a distance of nearly 1000 leagues, nothing but feasts and spectacles of various kinds were to be seen. Palaces were raised on barren heaths, to be inhabited for a day. Villages and towns were built in the wildernesses, where, a short time before, the Tartars had fed their herds. An immense population appeared at every step—the picture of affluence and prosperity. A hundred different nations paid homage to their sovereign. Catharine saw, at a distance, towns and villages, of which only the outward walls existed. She was surrounded by a multitude of people, who were conveyed on during the night, to afford her the same spectacle the following day. Two sovereigns visited her on her journey—the king of Poland, Stanislaus Augustus, and the emperor Joseph II. The latter renewed his promise, given at St Petersburg, to assist her in her projects against the Turks. About this time, Prussia and England combined to instigate the Porte and Sweden to take up arms against Russia. The Turks were no more fortunate this time than before; and perhaps they would have been driven entirely out of Europe, had not Catharine been restrained by the interference of other states. (See *Reichenbach Congress*, 1790.) Peace was concluded at Jassy in 1792. Catharine kept Oczakow, and all the country between the Bug and the Dniester. Whilst Russia was occupied with the Turks, Gustavus III. had commenced hostilities, and, at one time, threatened St Petersburg. After a war of two years, peace was concluded at Werela, in 1790, leaving the possessions of both countries as they were before the commencement of hostilities. Thus all the wars undertaken against Russia had only tended to augment her political preponderance. Catharine's influence on Poland was equal to absolute dominion. When the republic, in 1791, wished to change its constitution, she took part with the opponents of the plan, gained the concurrence of Prussia, garrisoned Poland with her troops, and concluded a new treaty of partition with the cabinet of Berlin in 1792. (See *Poland*.) The insurrection, which broke out in Poland in 1794, could not save this unhappy country, which, after the storming of Praga, and the devastation of several of its provinces, was, at last, in 1795, entirely divided. Courland, too, was united with the Russian empire. A pension was given to

the last duke of Courland, and the last king of Poland spent his pension at St Petersburg. During these occurrences, Catharine could not take part in the war against France. She, however, broke off all connexion with the French republic, actively assisted the emigrants, and entered into an alliance with England against France. She likewise made war against Persia, and, as some historians assure us, entertained the project of destroying the power of the English in Bengal, when a fit of apoplexy put an end to her life, Nov. 9, 1796.

Catharine II. has been equally censured and praised. With all the weakness of her sex, and with a love of pleasure carried to licentiousness, she combined the firmness and talent of a powerful sovereign. Two passions were predominant with her until her death, love and ambition. She was never without her favourite, who, by the manner in which she distinguished him, and by the valuable presents she gave him, was publicly designated as such. She never, however, lost sight of her dignity. She was distinguished for activity, working with her ministers, writing a philosophical letter to Voltaire, and signing an order to attack the Turks, or to occupy Poland, in the same breath. She favoured distinguished authors, and was particularly partial to the French. At Paris she had a literary agent (baron Grimm). She several times invited Voltaire to her court, proposed to D'Alembert to finish the Encyclopedia at St Petersburg, and to undertake the education of the grand-duke. Diderot visited her at her request, and she often allowed him the privilege of familiar conversation with her. By these means she gained the favour of the literati of Europe, who called her the greatest of rulers; and, in fact, she was not without claims to this title. She protected commerce, improved the laws, dug canals, founded towns, hospitals, and colleges. Pallas and others travelled at her expense. She endeavoured to put a stop to the abuses which had crept into the administration of the different departments of government; but she began without being able to finish. Civilization advanced but slowly in Russia under her reign; and her anxiety to enlighten her subjects ceased when she began to entertain the idea that the French revolution had been brought about by the progress of civilization. Laws, colonies, schools, manufactures, hospitals, canals, towns, fortifications, every thing was commenced, but frequently left unfinished for want of means. She issued no paper money. Several letters, and other compositions by her, in the French and Russian languages, have been published. A statue of Catharine, of white marble, in a sitting posture, was executed by professor Gothe, at Stockholm, in 1825. The manners of the Russian court, in her time, are set forth in the diary of Krapomisky (St Petersburg, 1826). Krapomisky was her private secretary for ten years. Among several histories of her life are Tooke's Life of Catharine II., (3 vols.), and Castera's *Histoire de Catharine II.* (3 vols.).

CATHARINE PARR, sixth and last wife of Henry VIII., was the eldest daughter of Sir Thomas Parr of Kendal, and was, at an early age, distinguished for her learning and good sense. She was first married to Edward Burghe, and secondly to John Neville, lord Latimer, and, after his death, attracted the notice of Henry VIII., whose queen she became in 1543. Her zealous encouragement of the reformed religion excited the anger and jealousy of Gardiner, bishop of Winchester, the chancellor Wriothesley, and others of the Catholic faction, who conspired to ruin her with the king. Taking advantage of one of his moments of irritation, they accused her of heresy and treason, and prevailed upon the king to sign a warrant for her committal to the Tower. This being accidentally discovered to her, she repaired to the king, who purposely turned the conversation to religious subjects, and began to sound her opinions. Aware of his purpose, she humbly replied, "that on such topics she always, as became her sex and station, referred herself to the wisdom of his majesty, as he, under God, was her only supreme head and governor here on earth." "Not so, by St Mary, Kate," replied Henry; "you are, as we take it, become a doctor, to instruct, and not to be instructed by us." Catharine judiciously replied, that she only objected in order to be benefited by his superior learning and knowledge. "Is it so, sweetheart?" said the king; "and tended your arguments to no worse end? Then are we perfect friends again." After the death of the king she espoused the lord admiral Sir Thomas Seymour, uncle to Edward VI.; but this connexion proved unhappy, and involved her in troubles and difficulties. She died in child-bed in 1548, not without suspicion of poison. She was a zealous promoter of the reformation. Among her papers, after her death, was found a composition, entitled *Queen Catharine Parr's Lamentations of a sinner, bewailing the Ignorance of her blind Life;* a contrite meditation on the years she had passed in Catholic fasts and pilgrimages. It was published, with a preface, by the great lord Burleigh, in 1548. In her lifetime she published a volume of "Prayers or Meditations, wherein the Mind is stirred patiently to suffer all Afflictions here, and to set at nought the vaine Prosperitie of this Worlde, and also to long for the everlasting Felicitee." Many of her letters have also been printed.

CATHARINE PAWLOWNA, queen of Wurtemburg, grand-princess of Russia; born May 21, 1788; younger sister of the emperor Alexander, and widow of George, prince of Holstein-Oldenburg, whom she married in 1809, and thus got rid of a proposal of marriage made her by Napoleon. George died in Russia, December, 1812. She had two sons, by this marriage, born in 1810 and 1812. She was distinguished alike for beauty, talents, and resolution, and exhibited the tenderest affection for her brother Alexander. After 1812 she was frequently his companion in the campaigns in Germany and France, as well as during his residence at London and Vienna, and evidently had an important influence on several of his measures. It is said that she effected, in 1814, the marriage of the prince of Orange with her younger sister. In 1813, William, crown-prince of Wurtemburg, in Germany, formed an acquaintance with her, and, in 1814, saw her again in Paris. They were married Jan. 24, 1816, at Petersburg; and, after the death of his father, in October, 1816, he ascended with her the throne of Wurtemburg.—She was a generous benefactor to her subjects in the famine of 1816. She formed the female associations existing throughout the country, and established an agricultural society. She laboured to promote the education of her people, and founded valuable institutions for the poor (particularly a school for educating and employing poor children), a school for the females of the higher classes, and savings banks for the lower classes, after the example of the English savings banks. Indeed, she interfered, often arbitrarily, in the internal economy of the state, and chiefly imitated the institutions of England. For the fine arts she had but little taste. She died Jan. 9, 1819, leaving two daughters.

CATHCART, a Scottish parish, six miles in length and two and a half in breadth, situated partly in Lanarkshire and partly in Renfrewshire. The village of Cathcart is about three miles from Glasgow. Cathcart Castle (now a ruin) holds a commanding station above the river Cart. Near it stood queen Mary,

during the engagement of her forces with those of the regent Murray, at Langside, and there she witnessed the extinction of her hopes. A hawthorn bush, called queen Mary's thorn, marked out the spot where she stood, till it decayed through age; another has been planted in its place. The name Cathcart is derived from *Caer Cart*, the castle of Cart, and the old pronunciation is still popularly retained. The family of Cathcart obtained a peerage from James II. in 1442. Population of the parish in 1831, 2282.

CATHEDRAL; the Episcopal church of a diocese. The word is derived from the Greek καθέδρα, a seat or bench. From the early times of the Christian church, the bishop presided in the presbytery, or the assembly of priests. He was seated on a chair, a little higher than that of the others. The whole meeting of priests was called *cathedra;* and, at a later period, when Christians were allowed to build churches, this name was applied to the Episcopal churches, and the name *basilica* to the particular churches erected in honour of a saint or a martyr. In the middle ages, the cathedral received the form of the cross. Several of the old churches are masterpieces of Gothic architecture. Among these are the cathedral at Oviedo, that at Milan [see *Storia e Descrizione del Duomo di Milano* (commenced in 1387, and not yet finished), by Gaet. Franchetti, with engravings; Milan, 1821, 4to]; those at Toledo and Burgos; those at Rouen, Rheims, Amiens, and the church of Notre-Dame, in Paris (see *Cathédrales Françaises, dessinées, lithogr. et publ. par Chapuy, avec un Atlas historique et descriptif, par Jolimont*, 36 numbers, Paris, 1823, et seq. It contains views of twenty-five cathedrals). Those at Lund, Drontheim, Upsal, at York, Salisbury, and Canterbury, also Westminster abbey, are celebrated (see J. Britton's *History and Antiquities of the Metropolitan Church of Canterbury*, London, 1823, with engravings; and *Cathedral Antiquities*, by the same author). The cathedrals at Oppenheim, Ulm, Marburg, Meissen, Freiburg (q. v.), in the Brisgau, are fine buildings (see Dr Moller's *Denkmale der Deutschen Baukunst*, Darmstadt, 1825; and F. W. Schwechten's *Der Dom zu Meissen, bildl. dargest. u. beschr*, Berlin, 1826, three nos.). Respecting the cathedral of Cologne, see *Boisserée*. (For further information, see Wiebeking's work *Die Kathedralem von Rheims und York, nebst den Grundrissen von 42 andern merkwurdigen Kirchen*, Munich, 1825, fol., with engravings.) In Rome there has appeared, since 1822, the Collection of the oldest Christian Churches, or Basilicas, of Rome, from the 4th to the 13th century; drawn and published by J. G. Gutensohn and J. M. Knapp (architects); accompanied by an Archæol. Histor. Description, by Anth. Nibby, professor of Archæology in the University at Rome; seven numbers, each containing seven plates. From a work published at Milan, entitled *Chiese principali d'Europa*, we extract the following measurements of celebrated buildings.

St Peter's, at Rome.

	English feet.
Width of the cathedral,	233
External diameter of the cupola,	158
Total height,	448

Cathedral at Milan.

	Feet.
Width of the front,	216
Width of the cross,	251
Total height,	350

Pantheon at Rome.

	Pieds*.
Length of the portico,	103
Width of do.,	61
Interior diameter,	132
Height from the pavement to the summit of the cupola,	132

St Stephen's, at Vienna.

	Feet.
Width of the façade,	148
Great tower, from the ground to the top of the cross,	450
Greatest breadth between the two chief towers,	235

Santa Maria del Fiore, Florence.

	Feet.
Whole length,	517
Total height,	386

* The measurements of this edifice are given in feet; but they are neither Roman nor Parisian, nor any other feet we are acquainted with.

CATHERINE. See *Catharine*.

CATHERINE'S, ST; an island near Brazil, in the South Atlantic ocean; lon. 47° 15′ W.; lat. 27° 10′ S. It is twenty-four miles in length and six in breadth, and contains above 30,000 inhabitants. Santa Cruz is its principal fort.

CATHOLIC CHURCH. See *Roman Catholic Church*.

CATHOLIC EMANCIPATION. *Emancipation*, with the Romans, signified the release of a son from the power of his father, or of a slave from that of his master. It was performed before the pretor, attended by certain solemnities. By the emancipation of the Catholics is understood the abolition of those civil and ecclesiastical restrains to which the Catholics of Great Britain, and particularly of Ireland, were once subjected. Ireland, from the time of its subjugation, was maltreated by its conquerors; and repeated attempts, on the part of the natives, to free themselves from foreign domination, only increased the severity of their rulers. (See *Orangemen*.) The Catholic inhabitants of the country were excluded from public offices, and from all participation in the choice of members of parliament. None but the Anglo-Irish, belonging to the Episcopal church, which had now become the established church in Ireland—men who possessed the greatest part of the landed property, that had been torn from the original inhabitants—were eligible to public offices, or to a seat in parliament. In this oppressed condition the Irish Catholics remained till 1793. But when the principles disseminated at the time of the French revolution produced a general fermentation, which extended to the Irish Catholics, a lively desire was awakened in them to obtain equal rights with their Protestant fellow citizens. They were supported in England itself by a very respectable party. Burke repeatedly spoke in parliament in favour of their emancipation. In 1792, they presented a petition, praying for the abolition of all the restrictions to which they had hitherto been subjected. Upon this, a recommendation was addressed from the throne to the Irish parliament to contrive means for the melioration of the condition of the Catholics. Accordingly, the *Irish act*, so called, was passed in 1793, which conferred the elective franchise on the Catholics, threw open to them all employments in the army in Ireland, and all offices in the navy. Three offices in the army only were excepted—those of the commander-in-chief, master-general of the ordnance, and generals on the staff. They continued to be excluded, however, from thirty public offices, and from parliament—an arrangement which could not be changed without a repeal of the corporation and test acts (q. v.). A part of the Irish Catholics were satisfied with the concessions. Another party, however, encouraged by a few noblemen who had entered into connexion with France, cherished the hope that Ireland would succeed, with the help of France, in freeing itself from the British power. An insurrection speed-

ily broke out, which was quelled by the severity of the governor, lord Camden. It blazed forth again, however, in 1798, and Ireland became the theatre of a new civil war. By this rebellion, judicious men, both in England and Ireland, were convinced that, as long as the two kingdoms had separate legislatures, and that of the weaker was dependent on that of the stronger, and the inhabitants of the two kingdoms thought their interests inconsistent, jealousy and distrust would continue. The Anglo-Irish, also, who had previously desired the independence of Ireland, and, at first, supported the rebellion, perceived that the superior numbers of the Catholics, and their bitter enmity to the Protestants, would make the separation of Ireland from Britain a great misfortune for them. It was resolved, then, to unite Ireland with Britain; and, three years after the last rebellion, the union was effected, and the united parliament was opened, Jan. 22, 1801. In regard to ecclesiastical affairs, nothing further was provided in the act of union, than that the Episcopal church in Ireland should remain the established church, and should constitute, with the English, one church. Respecting the condition of the Catholics nothing was done, and Pitt observed that it would be well to reserve this business for future deliberation. The united parliament had been in session but a few days, when reports were spread, which cast a dark shade over the union, and gave occasion for much anxiety. The Catholics in Ireland, it was said, complained of the nonfulfilment of expectations which had been held out to them, to make them favourable to the union. Full emancipation had been promised them, as a certain consequence of it. Pitt, the author of the union, had pledged himself, with his colleagues, to promote the fulfilment of this wish of the Catholics. After the union was completed, invincible obstructions were found in the way of the accomplishment of their promise. Pitt and his colleagues had encouraged these hopes with the expectation of being able to fulfill them. For this reason, they endeavoured, after the union was completed, to obtain an act of parliament, by which admission to parliament and to offices of state, from which the Catholics were still excluded, should be made possible for a certain number of them, by dispensing with the test-oath. But the king set himself against this measure, as being inconsistent with his coronation-oath. Pitt and his colleagues, therefore, in 1801, resigned their places. Pitt foresaw that, if both houses agreed to this measure, the king would still withhold his permission; and thus the discontent of the Catholics would be directed against the person of the king himself. This, like a wise statesman, he wished by all means to avert; and, on this ground, in 1805, he spoke against the emancipation, when the opposition proposed anew to grant the Catholic a seat and a voice in parliament, and admissibility to all offices of state. During later years, the petition for complete emancipation was several times renewed in vain. In 1822, on the motion of Mr Canning, a bill was passed, in the house of commons, by a majority of twenty-one voices, enabling Roman Catholic peers to sit in parliament; but, in the house of lords, the bill was rejected. The same happened in 1825, when the duke of York, who died in 1827, solemnly opposed it. In 1827, under Canning's administration, the motion for emancipation was lost, in the house of commons, by a majority of three. The measure was, at last, effected, under the administration of the duke of Wellington. The disturbances in Ireland were assuming continually a more organized character, under the influence of the Catholic association, which was spread through the country, and directed by men of great abilities—such as O'Connell and Shiel—so that his grace was, at last, driven to support the cause of emancipation. Mr Peel, who had formerly spoken warmly against emancipation, now moved it in the house of commons. One of the chief opposers of the measure was lord Eldon, the former lord chancellor; one of the royal family—the duke of Cumberland—also took part with the opponents.

The emancipation of the Catholics is so interesting an event, that the following abstract of the fate of various motions respecting it may not be unacceptable to our readers. In the year 1805, a majority of 129 in the house of lords, and of 212 in the house of commons, refused to act on the petition of the Catholics, moved severally by lord Grenville and Mr Fox. In 1807, lord Grenville withdrew his motion in favour of emancipation, it being understood that his majesty was averse to it. In 1808, Mr Grattan's motion was rejected, in the house of commons, by a majority of 153, and lord Donoughmore's, in the house of lords, by a majority of eighty-seven. In 1810, a motion to the same effect, by the same members, was again lost, by a majority of 112 in the commons, and 86 in the lords. In 1812, there was a majority of 72 in the lords, and 85 in the commons, against the movers. Mr Canning's motion was lost, in the same year, by a majority of 129 in the commons, and that of the marquis of Wellesly, by a majority of 113 in the lords. In 1813, the motions of Mr Grattan, Sir John Cox Hippesley, and doctor Duigenan, drew forth majorities against the Catholics of forty, forty-eight, and forty-two, and, on the 24th of May, the bill was given up. In 1821, Mr Plunkett carried the bill through the house of commons by a majority of nineteen; but it was lost in the lords by a majority of thirty-nine. In 1822, Mr Canning carried it, in the commons, by a majority of twenty-one; but it was thrown out, in the lords, by a majority of forty-two. In 1825, Sir Francis Burdett carried it, in the commons, by a majority of twenty-seven; but it was again thrown out, in the lords, by a majority of forty-eight. In 1827, Sir Francis Burdett's motion for a committee was lost, in the commons, by a majority of three. In 1828, the motion for a conference with the lords was carried, in the commons, by a majority of six; but thrown out, in the lords, by a majority of forty-five. And, in 1829 (April 10), a *relief bill*, abolishing the civil disabilities on Roman Catholics, by repealing the oaths of supremacy, &c., was carried through the commons by Mr Peel, with a majority of 180 on the second reading, and 178 on the third; and through the lords, by the duke of Wellington, with a majority of 105 on the second reading, and 104 on the third. By this bill, Catholics are eligible to all offices of state, excepting the lord-chancellorships of England and Ireland, the lord-lieutenancy of Ireland, the office of regent or guardian of the United Kingdom, and that of high commissioner to the church of Scotland. They are still excluded from the right of presentation to livings, and all places connected with the ecclesiastical courts and establishment. The church patronage attached to any office in the hands of a Catholic is vested in the archbishop of Canterbury. Attached to the bill is a clause for the gradual suppression of the Jesuits and monastic orders (religious establishments of females excepted). At the same time, the duke carried a *disfranchisement bill*, by which the forty shilling freeholders of Ireland were disfranchised, and the income of real estate necessary to entitle to a vote in elections in that country raised to ten pounds sterling. There has been published a History of the late Catholic Association of Ireland, from its Institution, in 1760, to its final Dissolution in 1829; by Thomas Wyse, junior,

Esq., one of the members of that body; London, 1829, 2 vols. 8vo.

CATHOLIC EPISTLES; a name given to seven epistles of the New Testament, because written to Christians in general, and not to believers of some particular place. They are, one of James, two of Peter, three of John, and one of Jude.

CATHOLIC MAJESTY; a title which pope Alexander VI. gave to the kings of Spain, in memory of the perfect expulsion of the Moors out of Spain, in 1491, by Ferdinand of Arragon. But even before that time, and especially after the council at Toledo, in 589, several Spanish kings had borne this title.

CATILINE, Lucius Sergius, was just entering on the age of manhood when Rome became a prey to the rage of Marius and Sylla. Of patrician birth, he attached himself to the cause of the latter, had some share in his success, and still more in his proscriptions. Murder, rapine, and conflagration were the first deeds and pleasures of his youth. His influence on the fortunes of the disordered republic became important. He appears to have served in the army with reputation. He was peculiarly dangerous and formidable, as his power of dissimulation enabled him to throw a veil over his vices. Such was his art, that, while he was poisoning the minds of the Roman youth, he gained the friendship and esteem of the severe Catulus. Equally well qualified to deceive the good, to intimidate the weak, and to inspire his own boldness into his depraved associates, he evaded two accusations brought against him by Clodius, for criminal intercourse with a vestal, and for monstrous extortions, of which he had been guilty while proconsul in Africa. He was suspected, also, of having murdered his first wife and his son. A confederacy of many young men of high birth and daring character, who saw no other means of extricating themselves from their enormous debts, than by obtaining the highest offices of the state, having been formed, Catiline was placed at their head. This eminence he owed chiefly to his connexion with the old soldiers of Sylla, by means of whom he kept in awe the towns near Rome, and even Rome itself. At the same time, he numbered among his adherents not only the worst and lowest of the riotous populace, but also many of the patricians, and men of consular rank. Every thing favoured his audacious scheme. Pompey was pursuing the victories which Lucullus had prepared for him; and the latter was but a feeble supporter of the patriots in the senate, who wished him, but in vain, to put himself at their head. Crassus, who had delivered Italy from the gladiators, was now striving, with mad eagerness, after power and riches, and, instead of opposing, countenanced the growing influence of Catiline, as a means of his own aggrandizement. Cæsar, who was labouring to revive the party of Marius, spared Catiline, and, perhaps, even encouraged him. Only two Romans remained determined to uphold their falling country—Cato and Cicero; the latter of whom alone possessed the qualifications necessary for the task. The conspirators were now planning the elevation of Catiline and one of his accomplices to the consulship. When this was effected, they hoped to obtain possession of the public treasures and the property of the citizens under various pretexts, and especially by means of proscription. It is not probable, however, that Catiline had promised them the liberty of burning and plundering Rome. Cicero had the courage to stand candidate for the consulship, in spite of the impending danger, of the extent of which he was perfectly aware. Neither insults, nor threats, nor even riots and attempts to assassinate him, deterred him from his purpose; and, being supported by the rich citizens, he gained his election, B. C. 65. All that the party of Catiline could accomplish was the election of Caius Antony, one of their accomplices, as colleague of Cicero. This failure, however, did not deprive Catiline of the hope of gaining the consulship the following year. For this purpose, he redoubled the measures of terror, by which he had laid the foundation of his power. Meanwhile, he had lost some of the most important members of his conspiracy. Antony had been prevailed upon or compelled by Cicero to remain neutral. Cæsar and Crassus had resolved to do the same. Piso had been killed in Spain. Italy, however, was destitute of troops. The veterans of Sylla only waited the signal to take up arms. This signal was now given by Catiline. The centurion Manlius appeared among them, and formed a camp in Etruria. Cicero was on the watch: a fortunate accident disclosed to him the counsels of the conspirators. One of them, Curius, was on intimate terms with a woman of doubtful reputation, Fulvia by name, and had acquainted her with their plans. Through this woman, Cicero learned that two knights had undertaken to assassinate him at his house. On the day which they had fixed for the execution of their plan, they found the doors barred and guarded. Still Cicero delayed to make public the circumstances of a conspiracy, the progress and resources of which he wished first to ascertain. He contented himself with warning his fellow citizens, in general terms, of the impending danger. But when the insurrection of Manlius was made known, he procured the passage of the celebrated decree, that "the consuls should take care that the republic received no detriment." It was exceedingly difficult to seize the person of one who had soldiers at his command, both in and out of Rome; still more difficult would it be to prove his guilt before those who were accomplices with him, or, at least, were willing to make use of his plans to serve their own interest. He had to choose between two evils—a revolution within the city, or a civil war: he preferred the latter. Catiline had the boldness to take his seat in the senate, known as he was to be the enemy of the Roman state. Cicero then rose and delivered that bold oration against him, which was the means of saving Rome, by driving Catiline from the city. The conspirators who remained, Lentulus Sura, Cethegus, and other infamous senators, engaged to head the insurrection in Rome as soon as Catiline appeared at the gates. According to Cicero and Sallust, it was the intention of the conspirators to set the city on fire, and massacre the inhabitants. At any rate, these horrid consequences might have easily followed from the circumstances of the case, without any previous resolution. Lentulus, Cethegus, and the other conspirators, in the mean while, were carrying on their criminal plots. They applied to the ambassadors of the Allobroges to transfer the war to the frontiers of Italy itself. These, however, revealed the plot, and their disclosures led to others still more important. The correspondence of the conspirators with their leader was intercepted. The senate had now a notorious crime to punish. As the circumstances of the case did not allow of a minute observance of forms in the proceedings against the conspirators, the laws relating thereto were disregarded, as had been done in former instances of less pressing danger. Cæsar spoke against immediate execution, but Cicero and Cato prevailed. Five of the conspirators were put to death. Caius Antonius was then appointed to march against Catiline, but, on the pretext of ill health, gave the command to his lieutenant Petrius. He succeeded in enclosing Catiline, who, seeing no way of escape, resolved to die sword in hand. His followers imitated his example. The

battle was fought with bitter desperation. The insurgents all fell on the spot which their leader had assigned them, and Catiline at their head, at Pistoia, in Etruria, 5th Jan., B. C. 62. The history of Catiline's conspiracy has been written by Sallust.

CATINAT, Nicholas, marshal of France, was born at Paris, 1637. He quitted the profession of the law for that of arms, and attracted the notice of Louis XIV., at the storming of Lille (1667), and was promoted. By a number of splendid deeds, he gained the esteem and friendship of the great Condé, particularly by his conduct at the battle of Senef. He was sent as lieutenant-general against the duke of Savoy, gained the battles of Staffardo (Aug. 18, 1690) and of Marsaglia (Oct. 4, 1693), occupied Savoy and part of Piedmont, and was made marshal in 1693. In the conquered countries, his humanity and mildness often led him to spare the vanquished, contrary to the express commands of Louvois. In Flanders, he displayed the same activity, and took Ath, in 1697. In 1701, he received the command of the army of Italy against prince Eugene; but he was straitened by the orders of his court, and was destitute of money and provisions, while Eugene was allowed to act with full liberty. July 6th, he was defeated at Carpi. Equally unfortunate was the battle of Chiari, where Villeroi had the chief command. It was here, while rallying his troops, after an unsuccessful charge, that he replied to an officer who represented to him that death was inevitable in such an encounter, "True, death is before us, but shame behind." In spite of his representations, the French court would not believe the disasters in Savoy to be owing to the perfidy of the duke of Savoy, and Catinat was disgraced. He bore his misfortune with calmness, and died at St Gratien, in 1712. He was a true philosopher, religious without austerity, a courtier without intrigue, disinterested and generous when in favour, and cheerful in disgrace. From his unalterable calmness and consideration, his soldiers called him *le Père de la Pensée*.

CATO the Censor (Marcus Porcius), surnamed *Priscus*, also *Sapiens* and *Major* (the Wise and the Elder), was born 232 B. C., at Tusculum, and inherited from his father, a plebeian, a small estate, in the territory of the Sabines, which he cultivated with his own hands. He was a youth at the time of Hannibal's invasion of Italy. He served his first campaign, at the age of seventeen, under Fabius Maximus, when he besieged Capua. Five years after, he fought under the same commander at the siege of Tarentum. After the capture of this city, he became acquainted with the Pythagorean Nearchus, who initiated him into the sublime doctrines of his philosophy, with which, in practice, he was already conversant. After the war was ended, Cato returned to his farm. As he was versed in the laws, and a fluent speaker, he went, at day-break, to the neighbouring towns, where he acted as counsellor and advocate to those who applied to him. Valerius Flaccus, a noble and powerful Roman, who had an estate in the vicinity, observed the talents and virtue of the youth, conceived an affection for him, and persuaded him to remove to Rome, where he promised to assist him with his influence and patronage. A few rich and high-born families then stood at the head of the republic. Cato was poor and unknown, but his eloquence, which some compared to that of Demosthenes, and the integrity and strength of his character, soon drew the public attention to him. In court, and in the popular assemblies, he answered to the fine definition which he himself gave of an orator, and which Quinctilian has preserved to us; "a virtuous man skilled in the art of speaking well." At the age of thirty, he went as military tribune to Sicily. In the following year, he was questor, at which period there commenced, between him and Scipio, a rivalry and hatred, which lasted till death. Cato, who had returned to Rome, accused Scipio of extravagance; and, though his rival was acquitted of the charge, this zeal in the cause of the public gained Cato a great influence over the people. Five years after, having been already edile, he was chosen pretor, and obtained the province of Sardinia. His strict moderation, integrity, and love of justice, were here still more strongly displayed than in Rome. On this island, he formed an acquaintance with the poet Ennius, of whom he learned Greek, and whom he took with him to Rome on his return. He was finally made consul, 192 B. C., with his friend Valerius Flaccus for his colleague. He opposed, with all his power, the abolition of the Oppian law, passed in the pressing times of the second Punic war, forbidding the Roman women to wear more than half an ounce of gold, to dress in garments of various colours, or to wear other ornaments; but he was obliged to yield to the eloquence of the tribune Valerius, and the urgent importunities of the women. Soon after, he set out for Spain, which was in a state of rebellion. His first act was to send back to Rome the supplies which had been provided for the army, declaring that the war ought to support the soldiers. He gained several victories with a newly-raised army, reduced the province to submission, and returned to Italy, where the honour of a triumph was granted to him. Scarcely had he descended from his triumphal car, when he put off the toga of the consul, arrayed himself in the soldier's habit, and followed Sempronius to Thrace. He afterwards put himself under the command of the consul Manius Acilius, to fight against Antiochus, and to carry on the war in Thessaly. By a bold march, he made himself master of the Callidromus, one of the highest peaks of the mountain pass of Thermopylæ, and thus decided the issue of the battle. He brought the intelligence of this victory to Rome, 189 B. C. Seven years after, he obtained, in spite of a powerful faction opposed to him, the most honourable, and at the same time the most feared, of all the magistracies of Rome, the censorship. He had not canvassed for the office, but had only expressed his willingness to fill it. In compliance with his wishes, Valerius Flaccus was chosen his colleague, as the only person qualified to assist him in correcting the public disorders, and restoring the ancient purity of morals. He fulfilled this trust with inflexible rigour; and, though his measures caused him some obloquy and opposition, they met, in the end, with the highest applause; and, when he resigned his office, it was resolved to erect a statue to him with an honourable inscription. He appears to have been quite indifferent to the honour; and when, before this, some one expressed his wonder that no statue had been erected to him, he answered, "I would rather have it asked why no image has been erected to Cato than why one has." Still he was not void of self-complacency. "Is he a Cato, then?" he was accustomed to say, when he would excuse the errors of another. Cato's political life was a continued warfare. He was continually accusing, and was himself accused with animosity, but was always acquitted. His last public commission was an embassy to Carthage, to settle the dispute between the Carthaginians and king Massinissa. It is said that this journey was the original cause of the destruction of Carthage; for Cato was so astonished at the rapid recovery of this city from its losses, that he ever after ended every speech of his with the well-known words, "*Præterea censeo, Carthaginem esse delendam*" (I am also of opinion that Carthage must be

destroyed). He died a year after his return (147 B. C.), eighty-five years old. Cato, who was so frugal of the public revenues, was not indifferent to riches. He was rigorously severe towards his slaves, and considered them quite in the light of property. He made every exertion to promote and improve agriculture. In his old age, he gave himself up to the company of his friends and the pleasures of the table. To this the verses of Horace allude—

Narratur et prisci Catonis
Sæpe mero caluisse virtus.

He was twice married, and had a son by each of his wives. His conduct as a husband and a father was equally exemplary. He composed a multitude of works, of which the only one extant is that *De Re Rustica*. Those of which the loss is most to be regretted are his orations, which Cicero mentions in terms of the highest encomium, and his history of the origin of the Roman people, which is frequently quoted by the old historians.

CATO, Marcus Porcius (called, to distinguish him from the censor, his great grandfather, *Cato of Utica*, the place of his death), was born 93 B. C., and, after the death of his parents, was brought up in the house of his uncle, Livius Drusus. He early discovered great maturity of judgment and firmness of character. It is related of him, that, in his fourteenth year, when he saw the heads of several proscribed persons in the house of Sylla, by whose orders they had been murdered, he demanded a sword of his teacher, to stab the tyrant, and free his country from servitude. With his brother by the mother's side, Cæpio, he lived in the tenderest friendship. Cato was chosen priest of Apollo. He formed an intimacy with the Stoic Antipater of Tyre, and ever remained true to the principles of the Stoic philosophy. His first appearance in public was against the tribunes of the people, who wished to pull down a *basilica* erected by the censor Cato, which was in their way. On this occasion, he displayed that powerful eloquence, which afterwards rendered him so formidable, and won the cause. He served his first campaign as a volunteer in the war against Spartacus, and distinguished himself so highly, that the prætor Gellius awarded him a prize, which he refused. He was sent as military tribune to Macedonia. When the term of his office had expired, he travelled into Asia, and carried the Stoic Athenodorus with him to Rome. He was next made questor, and executed his difficult trust with the strictest integrity, while he had the spirit to prosecute the public officers for their acts of extortion and violence. His conduct gained him the admiration and love of the Romans, so that, on the last day of his questorship, he was escorted to his house by the whole assembly of the people. The fame of his virtue spread far and wide. In the games of Flora, the dancers were not allowed to lay aside their garments as long as Cato was present. The troubles of the state did not permit him to remain in seclusion. The example of Sylla, in usurping supreme power, was followed by many ambitious men, whose mutual dissensions were all that saved the tottering constitution from immediate ruin. Crassus hoped to purchase the sovereignty with his gold; Pompey expected that it would be voluntarily conferred upon him; and Cæsar, superior to both in talent, united himself to both, and made use of the wealth of the one, and the reputation of the other, to attain his own objects. At the head of the senate, the sole prop of the republic, stood Catulus, Cicero, and Cato. Lucullus, who stood very high in the favour of the army, which he had so victoriously commanded, might alone have upheld the senate, had he not been more desirous to enjoy his wealth than to devote himself to the care of the commonwealth. Cato, keeping aloof from all parties, served the commonwealth with sagacity and courage; but he often injured the cause which he was trying to benefit, by the inflexibility of his character. He was on the way to his estate, when he met Metellus Nepos, who was travelling to Rome to canvass for the tribuneship. Knowing him to be a dangerous man, Cato returned immediately, stood candidate for the office himself, and was chosen, together with Metellus. About this time, the conspiracy of Catiline broke out. Cato supported with all his power the consul Cicero, first gave him publicly the name of *father of his country*, and urged, in a fine speech preserved by Sallust, the rigorous punishment of the traitors. He opposed the proposition of Metellus Nepos to recall Pompey from Asia, and give him the command against Catiline, and came near losing his life in a riot excited against him on this account by his colleague and Cæsar. After the return of Pompey, he frustrated many of his ambitious plans, and first predicted the consequences of his union with Crassus and Cæsar. He afterwards opposed, but in vain, the division of lands in Campania. Cæsar at that time abused his power so much as to send Cato to prison, but was constrained, by the murmurs of the people, to set him at liberty. The triumvirate, in order to remove him to a distance, had him sent to Cyprus, to depose king Ptolemy, under some frivolous pretext. He was compelled to obey, and executed his commission with so much address that he enriched the treasury with a larger sum than had ever been deposited in it by any private man. In the mean time, he continued his opposition to the triumvirate. Endeavouring to prevent the passage of the Tribonian law, which invested Crassus with an extraordinary power, he was a second time arrested; but the people followed him in a body to the prison, and his enemies were compelled to release him. Being afterwards made prætor, he carried into execution a law against bribery, that displeased all parties. After the death of Crassus, the civil commotions increased, and Cato, as the only means of preventing greater evils, proposed that Pompey should be made sole consul, contrary to the constitution, and the proposition was adopted. The year following, Cato lost the consulship by refusing to take the steps necessary for obtaining it. At this time the civil war broke out. Cato, then propretor in Sicily, on the arrival of Curio with three of Cæsar's legions, departed for the camp of Pompey, at Dyrrachium. He had still been in hopes to prevent the war by negotiation; and when it broke out, he put on mourning in token of his grief. Pompey, having been victorious at Dyrrachium, left Cato behind to guard the military chest and magazine, while he pushed after his rival. For this reason, Cato was not present at the battle of Pharsalia after which he sailed over with his troops to Cyrene, in Africa. Here he learned that Pompey's father-in-law, Scipio, had gone to Juba, king of Mauritania, where Varus had collected a considerable force. Cato immediately set off to join him, and, after undergoing hunger, thirst, and every hardship, reached Utica, where the two armies effected a junction. The soldiers wished him to be their general, but he gave this office to Scipio, and took the command in Utica, while Scipio and Labienus sallied out against Cæsar. Cato had advised them to protract the war, but they ventured an engagement, in which they were entirely defeated, and Africa submitted to the victor. Cato had at first determined to defend himself to the last, with the senators in the place; but he afterwards abandoned this plan, and dismissed all who wished to leave him His resolution was taken. On the evening before the day which he had fixed upon for executing it he took a tranquil meal, and discussed

various philosophical subjects. He then retired to his chamber, and read the *Phædo* of Plato. Anticipating his intentions, his friends had taken away his sword. On finding that it was gone, he called his slaves, and demanded it with apparent equanimity; but when they still delayed to bring it, he struck one of the slaves, who was endeavouring to pacify him. His son and his friends came with tears, and besought him to refrain from his purpose. At first he reproached his son for disobedience, then calmly advised those present to submit to Cæsar, and dismissed all but the philosophers Demetrius and Apollonius, whom he asked if they knew any way by which he could continue to live without being false to his principles. They were silent, and left him, weeping. He then received his sword joyfully, again read *Phædo*, slept a while, and, on awaking, sent to the port to inquire if his friends had departed. He heard, with a sigh, that the sea was tempestuous. He had again sunk into slumber, when word was brought him that the sea was calm, and that all was tranquil in the harbour. He appeared satisfied, and was scarcely alone when he stabbed himself with his sword. The people rushed in, and took advantage of a swoon, into which he had fallen, to bind up his wounds; but, on coming to himself, he tore off the bandages, and expired (44 B. C.). The Uticans buried him honourably, and erected a statue to him. But Cæsar, when he heard the news of his death, exclaimed, "I grudge thee thy death, since thou hast grudged me the honour of sparing thy life." The truly Roman virtue of Cato has been celebrated by Lucan, in his *Pharsalia*, in a truly Roman style, with the words

Victrix causa diis placuit, sed victa Catoni.

CATOPTRICS (from *κάτοπτρον*, a mirror); the science which treats of reflected light. See *Optics*.

CATRINE; a village of Scotland, pleasantly situated on the northern bank of the river Ayr, about fourteen miles from the town of that name, and thirty-two south of Glasgow. It was constructed, in 1787, by Mr Alexander of Ballochmyle, and Mr David Dale of Glasgow, for the accommodation of the workers employed in the extensive cotton factories erected there at the same time. The population of the place may be about 3,000. It is provided with a good library and schools.

CATS, James; born in 1577, at Brouwershaven, in Zealand; one of the fathers of the Dutch language and poetry. He studied at Leyden and Orleans. In 1627 and 1631 he was ambassador to England, and afterwards grand pensioner of Holland. His poetry is distinguished for simplicity, *naïveté*, richness of imagination, and winning though unpretending morality. His works consist of allegories, according to the taste of his times, poems on the different ages and situations of life, idyls, &c. He died in 1660.

CATSKILL MOUNTAINS; a range of mountains in New York, much the highest in the state. They extend along to the west of the Hudson, from which their base is, at the nearest point, eight miles distant. The principal summits are in Greene county. The two most elevated peaks are Round Top and High Peak. The former, according to the measurement of captain Partridge, is 3804 feet above the level of tide water; and the latter, 3718 feet. The Catskill mountains present scenery of singular beauty and grandeur, and have become a noted resort of travellers during the summer. On a level tract of about seven acres, called *Pine Orchard*, elevated 2214 feet above the level of tide water, a large and commodious house has been erected for the accommodation of visitors. It is situated directly on the brow of the mountain, and commands an enchanting view of the country on both sides of the Hudson, embracing a tract about 100 miles in length and 50 in breadth. This place, which is twelve miles from the town of Catskill, is approached by a good turnpike road, which winds up the side of the mountain. Two miles west of Pine Orchard are the fine cascades of the Kaaterskill, a stream which is supplied by two small lakes situated high in the mountains. The upper fall is 175 feet in height; and a few rods below is the other, of 80 feet, both perpendicular. The stream passes into a deep and very picturesque ravine, which is bordered by mountains rising abruptly 1000 or 1500 feet.

CATSUP. See *Ketchup*.

CATTARO; a seaport in Dalmatia, capital of a circle of the same name (formerly called *Venetian Albania*), at the bottom of the gulf of Cattaro (*bocche di Cattaro*), on the E. side of the Adriatic; twenty-five miles W. N. W. Scutari, thirty S. S. E. Ragusa; lon. 18° 58′ E.; lat. 42° 17′ N.; population, 2,500. It is a bishop's see. It contains a cathedral, seventeen Catholic churches and chapels, one Greek church, and an hospital. It has a remarkable harbour, one of the most secure in Europe, being defended by a castle and strong battlements, and enclosed with rocks of such height, that the sun is seen in winter only a few hours in the day. Population of the circle, 31,570; square miles, 296.

CATTEGAT; a large gulf of the North sea, between North Jutland to the W., Norway to the E., and the Danish islands of Zealand, Funen, &c., to the S.; about 120 miles from N. to S., and between 60 and 70 from E. to W. The adverse winds which often prevail here render the navigation dangerous. The Cattegat is noted for its herring fishery. It contains the islands Samsoe, Anholt, Lessoe, and Hertzholm.

CATTI; one of the most renowned and valiant German tribes. They inhabited what is now *Hesse*, also part of Franconia and Westphalia. They carried on bloody wars with the Hermunduri and Cherusci. In the time of Cæsar they dwelt on the Lahn, and opposed him with effect. Drusus defeated without reducing them. In the reign of Marcus Aurelius they made incursions into Germany and Thrace, but were afterwards defeated by Didius Julianus. In 392 they made their last appearance in history in union with the Franks. According to Cæsar, their territory was divided into 100 districts, each of which was obliged to send annually 1000 men into the field, whose place was supplied the following year by those who had before remained at home to cultivate the ground. Their food was milk, cheese, and game; their dress the skins of animals. Their limited princes, who governed in connexion with a diet, annually distributed the lands among the families. See *Germania*.

CATULLUS, Caius Valerius, a famous Roman poet, born, B. C. 86, at Verona (according to some, at Sirmium, a small town on a peninsula of lake Benacus, now *lago di Garda*), of rich and respectable parents, went, in his youth, to Rome, where his accomplishments soon won him the favour of those who adorned that splendid era. He was the friend of Cicero, of Plancus, Cinna, and Cornelius Nepos; to the last he subsequently dedicated the collection of his poems. This collection is not of great extent, but shows what he was capable of doing in several kinds of poetry, had he preferred a steady course of study to pleasure and travelling. Probably a part of his poems have not come down to us. Of the merit of his productions there has been but one opinion among the ancients as well as moderns. Tibullus and Ovid eulogize him; and Martial, in one of his epigrams,

grants to him alone a superiority over himself. In sportive composition and in epigrams, when he keeps within the proper limits of that species of poetry, he is a model. He succeeded, also, in heroic verse, as in his beautiful episode of Ariadne, which appears to have inspired the poet who afterwards sung of Dido. He was the first of the Romans who successfully imitated the Greek lyric poetry. The four odes of his that remain to us make us feel a lively regret for the loss of the others. A weighty objection, however, against most of his writings, is their licentiousness and indelicacy. The common opinion is, that he died 57, B. C., in the thirtieth year of his age. Scaliger maintains, but without sufficient proof, that he died in his seventy-first year. The edition of his works by Volpius (Padua, 1737), and that of Dœring (Leipsic, 1788—90, 2 vols.), deserve honourable mention. His poems are usually published with those of Tibullus and Propertius.

CAUBUL, or CABUL. See *Afghanistan*.

CAUCASUS; a chain of mountains in Western Asia, extending from south-east to north-west, and occupying the isthmus (containing 127,140 square miles) between the Black and Caspian seas. The length is computed at 644 miles; the breadth is various; from Mosdox to Tiflis it may be estimated at 184 miles. Torrents, precipices, and avalanches render the mountains almost impassable. The Caucasus is divided into two parallel chains. The central ridge, from which the mountains fall off on each side, consists of various sorts of granite. The summits are covered with snow and ice, and are mostly barren; the lower parts are clothed with thick forests. On the western declivity is the Elburs, which a Russian measurement makes 16,700 feet high. The Casibeg is 17,388 feet high. The most elevated summit (the Snowy mountain) is on the eastern side, west of the Cuban. It was first ascended by an European traveller in 1810. It is also called *Schahdagh* (King's mountain) and *Schah-Elburs; Elburs* being the common name of all the high, conical summits rising from the chain of the Caucasus. The limit of perpetual snow on these mountains is 1890 feet higher than on the Alpine regions of Savoy and Switzerland. Two of the passes, or *gates*, as they are often called, are remarkable—the Caucasian pass and the Albanian or Caspian pass. Most of the rivers, which take their rise in the Caucasus, flow in an easterly direction to the Caspian sea, or in a westerly course to the Black sea. On the northern declivity, the Terek flows easterly into the Caspian, and the Cuban westerly into the Black sea; beyond these rivers, the mountainous chain sinks down, by degrees, to the sandy plains in the south of Russia. On the southern declivity, the Kur flows easterly into the Caspian, and the Rioni (called by the ancients the *Phasis*) westerly into the Black sea: beyond these rivers rise the mountains of Turkish and Persian Armenia, which connect the Caucasus with the other chains of Western Asia. The highest ridge of the Caucasian chain is rugged and barren, but the southern declivity is extremely fruitful. The whole surface of the country abounds in forests and fountains, orchards, and vineyards, corn fields, and pastures, in rich alternation. Grapes and various kinds of fleshy fruits, chestnuts, and figs, grow spontaneously. Grain of every description, rice, cotton, and hemp flourish abundantly. But agriculture is much neglected; partly owing to the indolence of the inhabitants, and partly to their want of numbers and of security, as the people of the mountains, particularly the Lesghians, in their plundering expeditions, rob the cultivators of the fruits of their industry, and carry off the men for slaves. There are multitudes of wild animals of every description here. The pheasant is a native. The mineral kingdom is full of the richest treasures, which are nearly untouched. Mineral waters abound, and there are fountains of petroleum and naphtha in many districts. Some fountains throw up a slime with the petroleum, which, being deposited, forms hills, styled by the natives *growing mountains*. The medicinal baths of Caucasia are called by the general name of the *baths of Alexander*.

The inhabitants consist of small tribes of various origin and language—Georgians, Abassians, Lesghians, Ossetes, Circassians, Taschkents, Khists, Ingooshes, Charabulaks, Tshetshenzes, Tartars, Armenians, Jews, and, in some regions, wandering Arabs. Some of them are Greek and Armenian Christians; others are Mohammedans; others, Jews; and others worship stars, mountains, rocks, and trees. Many of the tribes are distinguished for the beauty, symmetry, and strength of their frames, particularly the Circassians and Georgians, who are the handsomest people in the world; hence the charming Circassian and Georgian females are sought for by the Eastern monarchs for their harams. The Caucasians (about 900,000 in all) are partly under petty sovereigns, who often rule over a few villages, and partly under elders. The most famous are the Lesghians, who inhabit the Eastern regions, and are the terror of the Armenians, Persians, Turks, and Georgians. Freedom makes them courageous and formidable to all their neighbours. They are forced, by the want of the most common necessaries of life, to resort to plunder. Hence their weaker neighbours seek to appease them with presents. The rocks and crags, on the other hand, protect the Lesghians effectually from all external assaults. This tribe entirely neglects the arts; and their agriculture and pasturage together are insufficient for their support. The management of domestic affairs rests wholly with the females. These prepare, from soft and fine wool, cloth dresses and coverings of various kinds. The men have no employment but war and plunder, whereby to procure the necessaries of life. Every prince in the neighbourhood can purchase their aid, by furnishing them with provisions and ten or twelve rubles of silver a-piece. They undertake private expeditions, lull their enemies into security, and then attack them unawares. They show the greatest fortitude in enduring hardships and reverses of fortune. Among them, and, in fact, throughout the Caucasus, hospitality and an implacable spirit of revenge prevail. No stranger can travel in their country without having a friendly native or Kunak to accompany him, by whom he is everywhere introduced, and kindly received and entertained.

All the regions on and about the Caucasus are comprehended under the name of *Caucasian* countries (containing 116,078 square miles and 1,673,500 inhabitants). Since the peace concluded between Russia and Persia, in 1813, they have belonged to the Russian empire, though without being completely subject to it; for only a small portion, the Georgian territories, have a well ordered government, mostly military. The Caucasian provinces are, at present, six in number:—1. The province of Tiflis or Grusia, also called *Georgia* (17,630 square miles, and 390,000 inhabitants; the capital, Tiflis, q. v.).—2. Imiretta, called by the Russians *Melitenia* (13,667 square miles, and 270,000 inhabitants; capital, Cotatis).—3. The province of Circassia, (32,526 square miles, and 550,000 inhabitants). Here are Russian military posts (to guard against the attacks of the independent princes of the mountains), the Great and Little Kabarda, Besghistan, &c.—4. Daghestan, i. e., the mountain land on the Caspian sea (9196 square miles, and 184,000 inhabitants; Derbent is its capital).—5. Schirvan (9429 square miles, 133 000

Inhabitants), with Bakou, the best harbour in the Caspian. This region, from its abundance of beautiful flowers, is called the *Paradise of Roses*. In the neighbourhood are the fountains of naphtha, to which the Parsees perform pilgrimages from India. Here, too, is the temple of fire, where a fire is kept perpetually burning.

Beyond Terek, on the northern side of Caucasus, lies, 6. the province of Caucasia (previous to 1822, the government of Georgievsk), containing 33,586 square miles, with 146,500 inhabitants, of whom 21,000 are Russians, and 48,000 colonists. Here are twenty-two fortified places (as Georgievsk, Kizliar (a commercial city, with a population of 9000), Alexandrovsk, &c.) along the Cuban, the Kama and the Terek, as defences against the savage tribes of the mountains. Since 1825, Stavropol has been the capital of this province, and general Jermoloff (q. v.) the governor. The trade is mostly in the hands of the Armenians. Here is the Scottish missionary station of Kara, founded in 1803, and enlarged by Moravians from Sarepta, with schools and a printing-office.

CAUCUS; an American term, used throughout the United States, for those meetings which are held by the different political parties, for the purpose of agreeing upon candidates for office, or concerting any measure which they intend to carry at the subsequent public or town meetings. From the fact that the meetings were first held in a part of Boston "where all the ship-business was carried on," Mr Pickering, in his vocabulary of Americanisms, (Boston, 1816), infers, that *caucus* might be a corruption of *caulkers*, the word *meeting* being understood. He thinks he has sometimes heard the expression a *caucus meeting* (caulkers' meeting).

CAULAINCOURT. See *Vicenza*.

CAUDINE FORKS. See *Avellino*.

CAULKING, or CAUKING, of a ship, consists in driving a quantity of oakum, or old ropes untwisted and drawn asunder, into the seams of the planks, or into the intervals where the planks are joined together, in the ship's decks or sides, in order to prevent the entrance of water. After the oakum is driven very hard into these seams, it is covered with hot melted pitch or resin, to keep the water from rotting it. Among the ancients, the first who made use of caulking were the inhabitants of Phœacia, now Corfu. Wax and resin appear to have been commonly used previously to that period. The Poles use a sort of unctuous clay for the same purpose on their navigable rivers.

CAUSTIC. The name of *caustic* (Lat. *causticus*, from Gr. *καίω*, I burn) is given to substances, which, by their chemical action, disorganize the parts of the body with which they are put in contact. They are called, likewise, *potential cauteries*, to distinguish them from the fire called *actual cautery*. Caustics, in general, act by decomposing chemically the tissues to which they are applied, by depriving them of life, and producing a real local and circumscribed gangrene, called *eschar* or *slough*. Those, the action of which is powerful,—for instance, caustic potassa, concentrated sulphuric acid, &c.,—produce these phenomena with such rapidity, that inflammation takes place only after the formation of the *eschar*; whilst, on the contrary, inflammation is the immediate consequence of the less energetic caustics. In both cases, suppuration occurs sooner or later, and separates the disorganized from the surrounding parts. Almost all the substances used as caustics have only a local action: some, however, are capable of being absorbed, and of exercising a deleterious action on the economy in general: arsenical preparations are an instance of it. The employment of caustics is now confined to a small number of cases. The actual cautery and the knife are, in general, preferred to them. They are used principally in order to establish issues, particularly in cases in which it is necessary to produce a powerful derivation; to stop the progress of certain gangrenous affections, such as *anthrax*; to open certain indolent abscesses; to change the mode of vitality of the skin in some cancerous or herpetic ulcers; to destroy the excrescences of wounds or proud flesh; and, finally, to prevent the absorption of the virus deposited at the surface of poisoned wounds.

CAUSTIC POTASSA (*potassa fusa; lapis causticus*); impure hydrate of protoxyde of potassium; caustic kali with lime; common caustic. This is seen in flat, irregular, brittle pieces, or in round sticks, like the nitrate of silver; of a greyish-white, sometimes reddish; of a savour extremely caustic, and a slight odour *sui generis*. This substance is extremely caustic; it decomposes quickly the parts with which it is put in contact, and leaves on the skin a soft, greyish *eschar*, which comes off slowly. Taken internally, it acts in the same way as all corrosive poisons; it has, nevertheless, been administered, in very dilute solutions, as an antacid, diuretic, and lithontriptic. It has succeeded in the gravel, in nephritic colics, and other affections proceeding from superabundance of uric acid. It has been recommended, likewise, in the treatment of scrofula, and in some diseases of the skin, such as leprosy, &c. This solution, even when very diluted, soon irritates the stomach, and brings on anorexia, which prevents it from being used for any length of time.

CAUSTIC SODA (*soda*); protoxyde of sodium. Its physical properties are similar to those of potassa, and it may be used with advantage as a *succedaneum* when employed as a caustic. In fact, the sub-carbonate, which forms during its action on the skin, is not deliquescent, as that of potassa, and, consequently, is not subject to spread.

CAVALCANTI, Guido; a Florentine philosopher and poet of the thirteenth century, the friend of Dante, and, like him, a zealous Ghibelline. When the dissensions of the Guelfs and Ghibellines disturbed the public peace of Florence, the citizens banished the chiefs of both parties. The Ghibellines were exiled to Sarzana. On account of the unhealthy air of that place, they were permitted to return; but Cavalcanti had contracted a disease of which he died (1300) at Florence. In his youth, he made a pilgrimage to St Jago de Compostella, in Galicia. Returning home through France, he fell in love, at Toulouse, with a young lady of the name of *Mandetta*. To her most of his verses which we possess are addressed. They are remarkable, considering the period at which they were written, for their beautiful style. His *Canzone d'Amore* has gained him the most fame. The learned cardinal Egidio Colonna, and some others, have made commentaries on it. His *Rime*, published by Cicciaporci, appeared at Florence in 1813.

CAVALIER, in fortification, is a work generally raised within the body of the place, ten or twelve feet higher than the rest of the works. It is most commonly situated within the bastion, and made much in the same form. Sometimes the cavaliers are placed in the gorges, or on the middle of the curtain; they are then made in the form of a horse-shoe. Their use is to command all the adjacent works and surrounding country. They are seldom made except when a rising ground overlooks some of the works. In modern times, it is considered that cavaliers in a bastion occupy too much room, render retrenchments impossible, and, unless a ditch separates the cavalier from the parapet of the bastion, cause the grenades

to fall upon the defenders of the latter; for which reasons it is considered best to put them on the curtains or behind the bastions.

CAVALRY; one of the three great classes of troops, and a formidable power in the hands of a leader who knows how to employ it with effect. This requires a bold and active spirit, able to avail itself, with quickness and decision, of every opportunity. The efficacy of cavalry arises particularly from the moral impression which it produces on the enemy. This is greater in proportion to the size of the mass and the rapidity of its motion. Its adaptation to speedy movements is another great advantage, which enables a commander to avail himself immediately of a decisive moment, when the enemy exposes a weak point, or when disorder appears in his ranks. It is a very important instrument in completing the defeat of an enemy, in disconcerting him by a sudden attack, or overthrowing him by a powerful shock. The use of cavalry is, it is true, oftentimes limited by the nature of the ground. In forests, in mountainous districts, on a marshy soil, &c., it is of but little avail in large bodies. In modern times, cavalry have been led against intrenchments, but only to their own destruction. In some instances, too, the cavalry have been dismounted, and employed as infantry; which may, on peculiar occasions, be advisable, but, on the whole, is contrary to their nature and purpose, and, if made a part of their duty, like other half measures, is usually disadvantageous. It is also unadvisable to keep large bodies of cavalry united during a campaign. They are to be collected in large masses only for particular objects. To keep them together the whole time would be troublesome, and their maintenance frequently attended with difficulty.

The unequal size of the horse, the very great diversity in his strength and breed, have at all times rendered it necessary to divide the cavalry into *light* and *heavy horse*. There is sometimes, also, an intermediate class. These different sorts are employed for different purposes. The heavy cavalry with defensive armour (cuirassiers), is more frequently employed in mass, where force is requisite; the lighter troops are used singly, and in small detachments, where swiftness and continued effort are required. Nevertheless, cuirassiers and dragoons, lancers and hussars, mounted riflemen, and *chevaux legers*, must, in the main points, be equally exercised in the duties appertaining to cavalry, and must be able to fight in the line as well as singly.

The use of cavalry is probably nearly as ancient as war itself; for in those countries where horses thrive most, and man may be said to live on horseback, he has always preferred to fight on horseback. The Egyptians are said to have had cavalry before the time of Moses. The Israelites, when at war with their neighbours, often had to encounter cavalry, but were afraid to mount horses until the time of Solomon. The Greeks appear not to have introduced cavalry into their armies till the second Messenian war, and even after that time, had comparatively few; but with them it was considered the most respectable class of troops, in which only the wealthy citizens served. The Persian cavalry, and, at a later period, the Macedonian, were much more numerous. The Romans learned its use from Pyrrhus and the Carthaginians. At a later period, the cavalry of the Gauls were particularly good. In the middle ages, the knights fought only on horseback, and disdained the foot-service. At this period, however, regular warfare was unknown, and was only gradually restored in the progress of time. After the introduction of artillery, although cavalry were used, yet their manœuvres were awkward and inefficient. The genius of Gustavus Adolphus first perceived the important use which could be made of it. He was without the heavy cavalry, which, since the time of chivalry, had gone out of use; but he found that the advantage of this species of troops did not consist in weight, but in the quickness of their motion. With reference to this, he formed his regiments of horse, and showed their real utility; but it was left to Seidlitz, a general of Frederic the Great, to display this most fully. Napoleon appears to have been well aware of the great value of cavalry in large masses, but he often sacrificed them unsparingly. This, together with certain erroneous dispositions which had crept into some armies, and had caused the cavalry to fail in services on which they ought never to have been put, and which were sometimes performed as well or better by other troops, gave rise, of late years, to doubts concerning their utility, which, however, are now abandoned. The writings of general Bismark, on the subject of cavalry, are valuable; as are also the *Nachrichten und Betrachtungen uber die Thaten und Schicksale der Reiterei in den Feldzugen Friederich II und in denen neuerer Zeit* (Statements and Observations respecting the Conduct and Fate of the Cavalry in the Campaigns of Frederic II., and in those of a later Period).

In the north of Europe, lances are now common among the light cavalry, as they have proved a formidable weapon when skilfully used. They will, no doubt, effect a change in the arms, and even in the organization, of the infantry, who can do little against lancers, if rain prevents them from firing. In the Prussian cavalry, which are among the finest in the world, lancers are very numerous.

A French author calls the cavalry, very appropriately, *l'arme du moment;* because they are peculiarly fitted to take advantage of decisive moments. A moment may occur, when a great victory can be decided by the sudden irruption of a body of cavalry, and the next moment it may be too late. A commander of cavalry must therefore be possessed of the rare courage which shrinks not from responsibility. Many battles in the late wars prove the truth of these remarks. Napoleon won the battle of Marengo chiefly by Kellermann's daring charge, at the head of 500 horse, on an enemy almost sure of victory. The campaigns in Russia, and the following war in Germany, showed the great disadvantage under which an army labours from the want of cavalry. Napoleon failed to follow up his advantages after the victories of Lutzen and Dresden, chiefly because his cavalry were raw and inexperienced. The training of cavalry is much slower than that of infantry. The best cavalry are now generally considered to be the Prussian and some species of the Russian. The French never were good horsemen, and the English have not kept pace with the numerous improvements introduced by the wars on the continent. It is a fact of interest, that the more civilization takes root among a nation, the more importance is given to infantry. All savage nations begin with cavalry, if they have horses. At present, infantry is the most numerous class of troops, though, before the time of Charles V., they were little esteemed.

CAVAN; one of the nine counties in the province of Ulster. The north-western part is occupied by a range of lofty hills, called the Ballynageeragh Mountains, but the remaining surface, which is undulating and irregular, is pervaded by bog, and interspersed with many agreeable lakes. The chief rivers are the Erne, the Croghan, and the Annalee, and the chief lakes Lough Ramor, Lough Sheelan, Lough Gawnagh, Lough Oughter, and Lough Erne, which may be said to commence or rise here. The soil of this county is cold, spongy, and inclined to be

rushey; and lime, one of the best remedies, is not to be had at a moderate price, wherefore wheat is little cultivated. Oats and flax are raised in abundance, and the high lands are entirely occupied in the grazing of store-cattle. The linen manufacture is the only trade carried on here to any extent, and it is conducted with less spirit in this than in the other counties of Ulster. The town of Cavan is situated nearly in the centre of the county, upon a stream, which is tributary to the river Erne. Population of the county in 1831, 228,050; of the town, 2,322.

CAVANILLES, Antonio Joseph; a Spanish clergyman and botanist; was born, 1745, at Valencia; died in Madrid, 1804. In 1777, he went to Paris with the children of the duke of Infantado, and remained there twelve years, occupied with the study of several sciences, but chiefly with botany. He published there, in 1784, Observations on the Article *Spain* in the New Encyclopedia, written with as much patriotism as profound reasoning. In the following year he commenced his great botanical work, *Monadelphiæ Classis Dissertationes decem* (Paris, 1785—89, Madrid, 1790, 4to, with engravings). After his return to Spain, he wrote another beautiful work, *Icones et Descriptiones Plantarum, quæ aut Sponte in Hispania crescunt aut in Hortis hospitantur* (Madrid, 1791—99, 6 vols., folio, with 601 engravings). It contains a number of new genera and species, natives of Spain, America, India, and New Holland. In pursuance of a commission from the king, Cavanilles travelled in Valencia, and collected the materials for his *Observaciones sobre la Historia Natural, Geografia, Agricultura, Poblacion*, etc., *del Reyno de Valencia* (Madrid, 1795—97, 2 vols., folio, with copperplates from the drawings of the author). The work was published at the expense of the king, and intended as the first part of a similar work to embrace the whole of Spain. Thunberg has named a family of plants *Cavanilla*. Cavanilles died in 1804.

CAVATINA; a short air without a return or second part, and which is sometimes relieved with recitative.

CAVE, or GROTTO; an opening produced by nature in the solid crust of the earth. Caves are principally met with in limestone of the transition and flœtz period, in gypsum, sometimes in sandstone, and in volcanic rocks (basalt, lava, tufa, &c.); sometimes they are the effect of crystallization. The form of the caves depends partly upon the nature of the substance in which they exist; but it is frequently altered by external causes. In reference to their internal construction, the hollows in the earth may be divided into three classes: those of the first are wide clefts; those of the second admit the daylight at both ends, and form natural passages, which sometimes serve the rivers as beds; the third and most common class consists of those which form a line of grottoes, about of an equal height, running in the same direction, and connected by passages more or less narrow. Out of some grottoes rivers take their course; others, again, admit rivers, or may be said to swallow them for a space, till they again emerge. There are many and various causes for the formation of caves. Those in limestone and gypsum are unquestionably the results of the dissolving power of water; in fact, the almost perfectly uniform direction, the gentle and equable declivity of most caves, appear to be the defect of the long continuance of water in them, the action of which has widened the existing crevices. In trachyt and lava, caves appear to have been produced by the effects of gas. The caves of gypsum often contain foul air; the caves of limestone, various figures of stalactites, produced by the deposit of the lime dissolved in the water. The most of these lime caves contain remnants of bones of animals, viz., of hyænas, elephants, bears. Many caves are remarkable only on account of their great size, or sublime from the awful gloom which pervades them, and the echoes which roll like thunder through their vaulted passages. Some are of great depth, as that of Fredericshall, in Norway, which is calculated to be 11,000 feet in depth. One of the grandest natural caverns known is Fingal's cave, in Staffa, one of the Western islands of Scotland. Its sides are formed of ranges of basaltic columns, which are almost as regular as hewn stone. The grotto of Antiparos, on the island of the same name, in the Archipelago, is celebrated for its magnificence. The passage at the entrance glitters, in the torch-light, as if it were studded with diamonds. The roof is adorned with stalactites, many of them twenty feet long, and hung with festoons of various forms and brilliant appearance. In some parts immense columns descend to the floor; others present the appearance of trees and brooks turned to marble. The Peak cavern, in Derbyshire, England, is also a celebrated curiosity of this kind. It is nearly half a mile in length, and, at its lowest part, 600 feet below the surface. The caves of Kirkdale, in England, and Gailenreuth, in Germany, are remarkable for the quantities of bones of the elephant, rhinoceros, and hyæna, found in them. The mine of fluor spar, in Castleton, Derbyshire, passes through several stalactic caverns. Other caverns in England contain subterraneous cascades. In the rock of Gibraltar there are a number of stalactic caverns, of which the principal is St Michael's cave, 1000 feet above the sea. The most famous caves in Germany are those of Baumann and Bielstein, in the Hartz. (See Buckland's *Reliquiæ Diluvianæ*, London, 1823.) The most celebrated caves in America are Madison's cave, in Rockingham county, Virginia, extending 300 feet into the earth, and adorned with beautiful incrustations of stalactites; Wier's cave, in the same county, extending 800 yards, but extremely irregular in its course and size. Near Corydon, Indiana, is a cave, which has been explored for the distance of several miles, celebrated for producing Epsom salts. In Kentucky and Tennessee caves are numerous, which appear to have been used as burial-places. In the north-west part of Georgia is a cave, called *Nickojack cave*, 50 feet high and 100 wide, which has been explored to the distance of three miles. A stream of considerable size runs through it, which is interrupted by a fall. Caves are sometimes found which exhale poisonous vapours. The most remarkable known is the Grotto del Cane, a small cave near Naples. In Iceland there are many caves, formed by the lava from its volcanoes. In the volcanic country, near Rome, there are many natural cavities of great extent and coolness, which are sometimes resorted to as a refuge from the heat. The grottoes in the Cevennes mountains in France are both numerous and extensive, and abound in objects of curiosity. In South America is the cavern of Guacharo, which is said to extend for leagues.

CAVE, Edward, an English printer, the founder of the Gentleman's Magazine, was born in 1691. His first occupation was that of clerk to a collector of the excise in the country. He then went to London, and put himself apprentice to a printer. When his indentures expired, he obtained a place in the post-office, and employed his leisure in writing for the newspapers. He published, in January, 1731, the first number of the Gentleman's Magazine, which has continued till this day, amid the crowd of magazines which have been established since. Cave was deprived of his place in the post-office on account of his having resisted some abuses relative to the privilege of franking letters. He died January 10, 1754.

CAVENDISH, THOMAS; an eminent navigator in the reign of Elizabeth. Having consumed his property by his early extravagances, he collected three small vessels for the purpose of making a predatory voyage to the Spanish colonies. He sailed from Plymouth in 1586, took and destroyed many vessels, ravaged the coasts of Chili, Peru, and New Spain, and returned by the cape of Good Hope, having circumnavigated the globe in two years and forty-nine days, the shortest period in which it had then been effected. In 1591 he set sail on a similar expedition, in which his principal success was the capture of the town of Santos, in Brazil. After suffering many hardships, he died in 1592.

CAVENDISH, WILLIAM, duke of Newcastle, was born in 1592, and educated by his father, on whose death he was raised to the peerage. On the approach of hostilities between the crown and parliament, he embraced the royal cause, and was invested with a commission, constituting him general of all his majesty's forces raised north of the Trent, with very ample powers. With great exertions, and the expenditure of large sums from his private fortune, he levied a considerable army, with which, for some time, he maintained the king's cause in the north. In military matters, he depended chiefly on his principal officers, whilst he himself indulged in the courtly pleasures and literary society to which he was attached. He obtained a complete victory over lord Fairfax on Adderton-heath, and, on the approach of the Scottish army, and its junction with the parliamentary forces, threw himself into York. Having been relieved by prince Rupert, he was present at the battle of Marston-moor, after which he left the kingdom. He returned, after an absence of eighteen years, and was rewarded for his services and sufferings with the dignity of duke. He died in 1676.

CAVENDISH, WILLIAM, first duke of Devonshire, was the son of William, third earl of Devonshire. He was born in 1640, and instructed with great care in classical literature. On various occasions, he distinguished himself by his spirit and valour, and, in 1677, began that opposition to the arbitrary measures of the ministers of Charles II., which caused him to be regarded as one of the most determined friends of the liberties of his country. Intimately connected with lord Russell, he joined him in his efforts for the security of free government and the Protestant religion. On the trial of lord Russell, he appeared as a witness in his favour, and offered to assist him in escaping, after he had been sentenced to death, by changing clothes with him in prison. In 1684, having succeeded to his father's title, and being regarded as one of the most formidable opponents of the arbitrary designs of king James II., attempts were made to intimidate him, but without success. Having been insulted by a minion of the king, he dragged him from the chamber by the nose in the royal presence. He took an active part in promoting the revolution, and was one of the first who declared for the prince of Orange. His services were rewarded with the dignity of duke of Devonshire. He still, however, maintained an independent bearing in parliament. He died in 1707.

CAVENDISH, HENRY, born 1731, the son of lord Charles Cavendish, and grandson of the second duke of Devonshire, devoted himself exclusively to the sciences, and acquired a distinguished rank among those learned men who have most contributed to the progress of chemistry. He discovered the peculiar properties of hydrogen, and the qualities by which it is distinguished from atmospheric air. To him we owe the important discovery of the composition of water. Scheele had already observed that, when oxygen is mixed with double the quantity of hydrogen, this mixture burns with an explosion, without any visible residuum. Cavendish repeated this experiment with the accuracy for which he was distinguished. He confined both the gases in dry earthen vessels, to prevent the escape of the product of their combustion, and found that this residuum was water, the weight of which was equal to the sum of the weights of the two gases. Lavoisier confirmed this conclusion in later times. The same spirit of accuracy in his experiments led Cavendish to another discovery which had escaped Priestley. The latter had observed that a quantity of atmospheric air, confined in a tube, through which the electric spark was transmitted, lost in volume, and formed an acid, which reddened the tincture of litmus; but he carried this experiment no farther. Cavendish repeated the experiment, by confining in the tube a solution of pure potash, which absorbed the acid, and thus proved it to be nitric acid. The analysis of the air, which remained in the tube after the experiment, showed that the weight of the oxygen and azote, which had disappeared, was equal to the weight of the acid thus formed. He easily determined the proportion of the azote to the oxygen, which was $2 : \frac{3}{4}$. It was found, also, that, when both gases, sufficiently pure, were mixed in that proportion, and exposed to the electric spark, the mixture disappeared entirely, by which his discovery was completely confirmed. Cavendish distinguished himself no less in natural philosophy, by the accuracy of his experiments. He possessed also a profound knowledge of the higher geometry, of which he made a very happy use in determining the mean density of the earth. He found it to be $5\frac{1}{2}$ times greater than the density of water—a conclusion which differs but little from that obtained by Maskelyne in another way. He was a member of the royal society at London, and in 1803, was made one of the eight foreign members of the national institute of France. Cavendish was probably the richest among the learned, and the most learned among the rich, men of his time. An uncle left him a large fortune in 1773. This increase of wealth made no change in his character and habits. Extremely regular and simple in his manner of living, he was liberal in encouraging science, and in his private charities. His large, well-chosen library was open for the use of learned men. He died in London, March, 1810, and left £1,200,000 sterling to his relations. His writings consist of treatises in the Philosophical Transactions, from 1766 to 1792. They are distinguished by acuteness and accuracy.

CAVIARE (*ickari*) is made in Russia from the roe of sturgeons, belugas, and many other fish. The roe is separated from the skin which encloses it, salted, and, after eight days, pepper and finely-minced onions are added. It is then dried, and serves as a relisher with toasted bread or bread and butter. The best caviare is that from the Crimea. From Kerch and Jenikale, in that province, 1500 barrels are annually exported to Moldavia and the countries on the Danube.

CAXAMARCA, or QUAXAMARKA; a province of Peru, bounded N. by Jaen, E. by Chacapoyas, S. E. by Caxamarquilla, S. by Huamachuco, W. by Sana and Truxillo; population, 46,000. The country is generally mountainous. It abounds in fruits and cattle. The inhabitants are, for the most part, Indians, and chiefly weavers.

Caxamarca; a town of Peru, capital of a province of the same name; about seventy miles from the Pacific ocean, 280 N. Lima; lat. 7° 3′ S.; lon. 78° 35′ W.; population, 12,000. It was at one time a royal city, where the emperor Atahualpa was put to death, after having been defeated and imprisoned by Pizarro.

CAXTON, William; an Englishman, memorable for having first introduced the art of printing into his native country. He was born in Kent, about 1410, and served an apprenticeship to Robert Large, a London mercer. On the death of his master, Caxton went to the Netherlands, as agent for the mercers' company, in which situation he continued about twenty-three years. His reputation for probity and abilities occasioned his being employed, in conjunction with Richard Whitchill, to conclude a treaty of commerce between Edward IV. and Philip, duke of Burgundy. He appears subsequently to have held some office in the household of duke Charles, the son of Philip, whose wife, the lady Margaret of York, distinguished herself as the patroness of Caxton. Whilst abroad, he became acquainted with the then newly discovered invention of printing. (See *Faust, John.*) At the request of the duchess, his mistress, he translated from the French a work, which he entitled the *Recuyell of the Historyes of Troye, by Raoul le Feure*, which he printed at Cologne, 1471, in folio. This book, considered as the earliest specimen of typography in the English language, is esteemed very valuable. At the famous sale of the duke of Roxburgh's library, in 1812, a copy was purchased by the duke of Devonshire, for £1,060, 10*s*. After this, he printed other works abroad, chiefly translations from the French; and, at length, having provided himself with the means of practising the art in England, he returned thither, and, in 1474, had a press at Westminster abbey, where he printed the *Game and Playe of the Chesse*, generally admitted to be the first typographical work executed in England. Caxton continued to exercise his art for nearly twenty years, during which time he produced between fifty and sixty volumes, most of which were composed or translated by himself. Caxton died about 1492, and was buried, according to some accounts, at Campden, in Gloucestershire; though others state his interment as having taken place at St Margaret's, Westminster.

CAYENNE, or FRENCH GUIANA; a province or colony in South America, belonging to France; bounded N. and N. E. by the Atlantic ocean, E. and S. by Brazil, and W. by Dutch Guiana; between lat. 1° 50′ and 6° N.; population, 17,331, of which only about 1000 are whites. This country was first colonized by the French in 1635; in 1654, it was taken by the British, and, in 1676, by the Dutch; but, in 1677, it was restored to the French. The coast of the country is generally low, marshy, and subject to inundation. The soil, in many parts, is very fertile, though in others dry, sandy, and soon exhausted. The climate resembles that of the West Indies, though it is more salubrious. The most noted article of produce is Cayenne pepper, the fruit of the *capsicum baccatum*. Other productions are coffee, sugar, cotton, cocoa, indigo, maize, cassia, and vanilla.

Cayenne; an island of South America, belonging to France, on the coast of the above province, separated from the main-land by the river Cayenne, which is about 300 miles in length. The island is eighteen miles long and ten broad, and has a fertile soil.

Cayenne; a town of South America, on the north point of the above island, at the mouth of the river Cayenne. It is the capital of the French colony of Cayenne, has a large and convenient port, and contains about 200 houses. Lat. 4° 56′ N.; lon. 52° 16′ W.

CAYENNE PEPPER, or CAPSICUM. *Capsicum* is the name of several species of South American and Indian plants, easily known by their hollow pods, of a shining red or yellow colour, which contain many small, flat, and kidney-shaped seeds. The principal species are heart or bell-pepper (*capsicum grossum*), Guinea pepper (*capsicum annuum*), and bird-pepper (*capsicum baccatum*). All the species of capsicum possess the same general qualities. In hot climates, but particularly in the East and West Indies, and some parts of Spanish America, the fruit of these plants is much used for culinary purposes. It is eaten in large quantities, both with animal and vegetable food, and is mixed, in greater or less proportion, with almost all kinds of sauces. The Cayenne pepper used in cookery is made from the fruit of different species of capsicum. This fruit, when ripe, is gathered, dried in the sun, and then pounded; and the powder is mixed with a certain portion of salt, and kept for use in closely-stopped bottles. It is very generally used as a poignant ingredient in soups and highly-seasoned dishes. Its taste is extremely acrid, and it leaves a durable sensation of heat on the palate, which is best removed by butter or oil. When taken in small quantities, Cayenne is a grateful stimulant; and, in medicine, it is used both externally and internally, to promote the action of the bodily organs, when languid and torpid; and it is said to have been found efficacious in many gouty and paralytic cases. The Guinea pepper, or annual capsicum, is considered the most hardy of this whole tribe of plants; and, in many parts of the south of Europe, its fruit is eaten green by the peasants at their breakfasts, and is preferred by them to onions or garlic. The fruit of all the species may be used in domestic economy, either as a pickle, or when dried before a fire, and ground to powder in a common pepper-mill, as Cayenne pepper. See *Capsicin*.

CAYES, LES, or AUX CAYES; a seaport town on the south coast of Hayti; thirty miles S. S. E. Port-au-Prince; lat. 18° 13′ N.; lon. 74° 31′ W. This town, a few years since, contained 12 or 15,000 inhabitants. It is now very much reduced. The harbour is inferior, but the surrounding country is fertile.

CAYLUS, Anne Claude Philippe de Tubieres, &c., count of, an archæologist, born Oct. 31, 1692, at Paris. After having served in the army during the war of the Spanish succession, he left the service in 1715, accompanied Bonac on his embassy to Constantinople the following year, and visited Greece, Troy, Ephesus, Byzantium, and Adrianople. In 1717, he returned to Paris, according to the wish of his mother, and began here to arrange his extensive collections. He commenced a great work on Egyptian, Grecian, Etruscan, Roman, and Gallic antiquities, with numerous plates. He was a member of the academy of painting and of the academy of inscriptions, and divided his labours between them. He made a chemical examination of the ancient method of encaustic painting, investigated the mode of painting on marble, the art of hardening copper, the mode by which the Egyptians raised great weights, the mummies, painting on wax, and many other subjects. If he has sometimes misunderstood the ancient authors, and committed some errors with respect to ancient monuments, he has, nevertheless, with great success, treated of the processes and materials employed in the arts by the ancients. He died in 1765. Integrity, simplicity, and disinterestedness were united in his character with occasional traits of dogmatism. He has left numerous works, tales as well as antiquarian researches. Among the latter is his *Recueil d'Antiquités Egyptiennes*, &c. (Paris, 1752—67, seven vols.). Caylus was also an industrious and skilful engraver, and has furnished a collection of more than 200 engravings, after drawings in the royal cabinet, and a great number of heads, after the first masters. His mother, niece of Mad. de Maintenon, made herself known by a spirited little work—*Mes Souvenirs*.

CAYMAN. See *Alligator*.

CAZOTTE, Jacques, an author, distinguished by facility and liveliness of style, born in 1720, at Dijon, studied with the Jesuits, and went, in 1747, to Martinico. On his return to France, he lost above eleven thousand pounds in letters of exchange upon the order of the Jesuits, to whose superior, Lavalette, he had sold his possessions in Martinico. The law-suit which he commenced, on this occasion, may be considered as the beginning of all the proceedings against the Jesuits in France. Cazotte shone in society among the *beaux esprits*. His romance of chivalry, *Olivier*, published in 1763, and, subsequently, his *Diable amoureux*, the *Lord Impromptu*, and *Œuvres morales et badines*, are proofs of his rich imagination, and his talent for writing with ease and precision. Being received into the order of Martines de Pasqualis, Cazotte lost himself in cabalistic dreams. With the assistance of Dom Chavis, an Arabian monk, he translated four volumes of Arabian Tales—a continuation of the Arabian Nights, forming the thirty-seventh and fourtieth volumes of the *Cabinet des Fées*. Though at the age of seventy years, he wrote them at midnight, after his return from the circles in which he had been visiting. Chavis dictated the outlines, and Cazotte wrought up the stories. He completed the task in two winters. The comic opera *Les Sabots* he composed in one night. In the revolution, which he opposed with all his power, he was thrown into the prisons of the Abbaye, with his daughter Elizabeth, in 1792. When the massacre of the prisoners took place, Sept. 2 and 3, Cazotte being delivered into the hands of the assassins, his daughter cast herself between him and the murderers, and prevented the execution of their purpose; but he was again condemned to death, and executed Sept. 25. From the scaffold he cried with a firm voice to the multitude, "I die, as I have lived, faithful to God and to my king."

CAZWINI, Zacharia Ben Mchammed, an Arabian naturalist, descended from a family of lawyers, who derived their origin from Anas Ben Malek, a companion of Mohammed, and had settled in Caswin, a city in Persia. From that place this author received the surname under which he has become celebrated. Of the circumstances of his life, we know only that he was cadi of Wazith and Hillah, and died in the year of the hegira 682 (A. D. 1283). His most important work is on natural history—The Wonders of Nature and the Peculiarities of Creation—of which Ideler, professor in the university of Berlin, has published the chapter on the Constellations of the Arabians, and of which there are fragments in Bochart's *Hierozoikon*, in Ouseley's Oriental Collections, and in Wahl's, Jahn's, and De Sacy's *Arab. Chrestomathias*. It was the object of Cazwini, like Pliny, to describe the wonders of all nature. His work contains a comprehensive view of all that had been written before him, but in so grand and original a manner, that it is of higher value than most of the original works which treat of the same subjects. There is an abridged translation of it in the Persian.

CEBES of Thebes was a disciple of Socrates. He is said to have saved Phædon, a young slave, from moral ruin. Nothing more is known of his life. Three dialogues—*Hebdome*, *Phrynichus*, and *Pinax*, or the *Picture*—are ascribed to him; but most critics regard the latter as the work of a later Cebes, or of a Stoic philosopher under this assumed name. Since the revival of learning, this interesting dialogue has been often reprinted by itself, or in connexion with the writings of Epictetus, Theognis, Pythagoras, &c. Among the larger editions is that of Schweighauser (Strasburg, 1806). There are many school editions.

CECIL, William (lord Burleigh). This eminent English statesman was son to Richard Cecil, master of the robes to Henry VIII., and was born at Bourne, in Lincolnshire, in 1520. He studied at St John's college, Cambridge, whence he removed to Gray's Inn, with a view to prepare himself for the practice of the law. Having carried on a successful controversy with two Irish priests on the subject of the pope's supremacy, he obtained the notice of the king, and, being presented with the reversion of the office of *custos brevium*, was encouraged to push his fortune at court. Having married the sister of Sir John Cheke, he was, by his brother-in-law, recommended to the earl of Hertford, afterwards the protector Somerset. Having lost his first wife, he took for a second the daughter of Sir Anthony Cooke, director of the studies of Edward VI.; and, by his alliance with this lady, herself eminent for learning, still further increased his influence. He rose, in 1547, to the post of master of requests, and, soon after, to that of secretary. He endured, in this reign, some of the vicissitudes which befell his patron Somerset, but always recovered his standing, and, in 1551, was knighted, and sworn a member of the privy council. His declining to aid the proclamation of lady Jane Grey, secured him a gracious reception from queen Mary, although he forfeited his office because he would not change his religion. In 1555, he attended cardinal Pole and the other commissioners appointed to treat for peace with France: and, on his return, being chosen knight of the shire for the county of Lincoln, distinguished himself by opposing a bill brought in for the confiscation of estates on account of religious principles. His foresight led him into a timely correspondence with the princess Elizabeth, previously to her accession; to whom, in her critical situation, his advice was exceedingly serviceable. On her accession, in 1558, he was appointed privy counsellor and secretary of state. One of the first acts of her reign was the settlement of religion, which Cecil conducted with great skill and prudence, considering the difficulties to be encountered. In foreign affairs, he showed much tact in guarding against the danger arising from the Catholic powers, and very judiciously lent support to the reformation in Scotland. The general tenor of Cecil's policy was cautious, and rested upon an avoidance of open hostilities, and a reliance on secret negotiation and intrigues with opposing parties in the neighbouring countries with a view to avert the dangers which threatened his own. This, upon the whole, was a course almost necessary, considering the situation of England, with a powerful, dissatisfied party at home, much dangerous enmity on the part of Catholic Europe, and an alliance existing between Scotland and France. On the suppression of the northern rebellion, in 1571, Elizabeth raised him to the peerage by the title of *baron Burleigh*, and, the following year made him a knight of the garter. He is charged with being deeply engaged in fomenting the troubles which caused the flight of the imprudent and unhappy Mary Stuart into England; and, after the discovery of Babington's conspiracy, he never ceased urging her trial and condemnation. He endured, for a short time, the hypocritical resentment of Elizabeth at the execution of the queen of Scots, but, after a while, recovered his former credit. At the time of the threatened Spanish invasion, he drew up the plan for the defence of the country with his usual care and ability; but, soon after, losing his wife to whom he was warmly attached, he became desirous of retiring from public business, and of leaving the field open to his son Robert, afterwards so celebrated as earl of Salisbury. He was persuaded, however, to keep his employment, and one of his latest efforts was to effectuate a peace with Spain, in opposition to the more

heated councils of the earl of Essex. This great minister died in the bosom of his family, and in the possession of all his honours, in 1598, being then in his 77th year. He left behind him the character of the ablest minister of an able reign. How far the emergencies of the period ought to excuse a portion of his dark and crooked policy, it may be difficult to determine; but it is easy to decide, that almost every school of politicians, under similar circumstances, have countenanced similar laxity under the plea of expediency. The private character of Burleigh was highly regarded; for, although he failed not to improve his opportunities as a courtier, he always exhibited a probity which conciliated esteem. He possessed, in a high degree, the solid learning, gravity, and decorum, which, in that age, usually accompanied elevated station. In his mode of living, he was noble and splendid, but, at the same time, economical, and attentive to the formation of a competent fortune for his family. His early occupation as a statesman precluded much attention to literature; but he is mentioned as the author of a few Latin verses, and of some historical tracts. A great number of his letters on business are still extant.

CECIL, Robert, earl of Salisbury, second son of lord Burleigh, was born, according to some accounts, about the year 1550; but his birth may, with more probability, be placed thirteen years later. He was deformed, and of a weak constitution; on which account he was educated at home, till his removal to the university of Cambridge. Having received the honour of knighthood, he went to France as assistant to the English ambassador, the earl of Derby, and, in 1596, was appointed one of the secretaries of state. On the death of Sir Francis Walsingham, he succeeded him as principal secretary, and continued to be a confidential minister of queen Elizabeth to the end of her reign. Having secretly supported the interests of James I., previous to his accession to the crown, and taken measures to facilitate that event, he was continued in office under the new sovereign, and raised to the peerage. In 1603, he was created a baron; in 1604, viscount Cranbourn; and in 1605, earl of Salisbury. The same year he was chosen chancellor of the university of Cambridge, and made a knight of the garter. He was the political rather than the personal favourite of the king, whom he served with zeal and fidelity; and, as he was certainly the ablest, so he was, perhaps, the most honest, minister who presided over the affairs of state during that reign. In 1608, on the decease of the lord high treasurer, the earl of Dorset, that office was bestowed on lord Salisbury, who held it till his death in 1612. This event took place at Marlborough, as he was returning to London from Bath, whither he had gone in a very debilitated state of health, to use the mineral waters. An interesting account of this journey, and of the last hours of this eminent statesman, drawn up by one of his domestics, may be found in Peck's *Desiderata Curiosa*. Lord Salisbury was the author of a Treatise against Papists; and of Notes on Dee's Discourse on the Reformation of the Calendar; and some of his letters, despatches, and speeches in parliament, have been published.

CECILIA. There are several saints of this name in the Catholic church. The most celebrated, who has been falsely regarded as the inventress of the organ, and who is the patron saint of music, is said to have suffered martyrdom, A. D. 220. Her pagan parents, says the legend, betrothed her, contrary to her wishes, to Valerian, a young pagan. But she had internally vowed to the Lord a perpetual virginity; and, whilst the instruments sounded, she sang in her heart to the Lord (*cantantibus organis, illa in corde suo soli Domino cantabat, dicens*, &c.); that is, she prayed—O Lord, allow my heart and my body to remain unpolluted. As soon as the bridegroom appeared, she forbade his approach, assuring him that an angel of the Lord protected her innocence. The unbelieving Valerian wished to convince himself of this assertion; she referred him to the bishop Urban, who was concealed among the tombs of the martyrs, and who instructed him in the Christian religion, and baptized him. When he returned to the bride, he saw the protecting angel, who presented them both with crowns of heavenly roses and lilies. Valerian now induced his brother Tubirtus to embrace the Christian faith. The Roman prefect Almachius caused both brothers to be beheaded, as zealous professors of Christianity. Life was to be given to Cecilia if she would sacrifice to the heathen gods; but she remained firm in her belief. Upon this, the tyrant caused her to be shut up in a bath of boiling water, in which she was found, the day after, unhurt. The executioner was then directed to behead her; he inflicted three blows, but was not able to separate the head from the body. She lived for three days, exhorting the faithful and giving alms to the poor. As early as the 5th century, we find a church in Rome dedicated to her. Pope Paschalis, who was very anxious to gather relics, endeavoured to discover her body. She appeared to him, as he relates in his letters, while he was sleeping, and pointed out the place of her sepulchre. Paschalis caused the body to be disinterred in 821, and placed it in the church which he rebuilt, where her monument is still to be seen. How Cecilia came to be the patron-saint of music is not agreed. The various opinions, however, seem to be united in this point, that it was either through a misunderstanding, or through an allegorical interpretation of the words above cited from her legend. Her worship, in this character, is very ancient. Among the poets, Chaucer, Dryden in his Alexander's Feast, and Pope, have sung her praises. Raphael, Domenichino, Dolce, and Mignard, have represented her in celebrated paintings. In the picture of Raphael, she appears as the personification of heavenly devotion. This is, indeed, a heavenly picture.

CECROPS, the founder of Athens, arrived there about 1550 B. C., from Sais, at the mouth of the Nile (this emigration, however, has been questioned by some late writers, e. g. Ottfried Muller), taught the savage inhabitants religion and morals, made them acquainted with the advantages of social life, laid the foundation of the future city of Athens (*Cecropia*), and built eleven other places, whose inhabitants he instructed in agriculture. He also planted the olive, and consecrated it to Minerva, the patron goddess of Athens. He then introduced into his adopted country the art of ship-building, and thus laid the foundation of its commerce. He died after a reign of fifty years. His monument was erected in the temple of Minerva; but, to preserve his memory always fresh in their minds, the people consecrated to him the constellation of Aquarius. (See *Attica*.) The researches which are making among the records of Egyptian history, since the key to their mysterious language has been discovered by the skilfully directed efforts of Young, De Sacy, Soega, Champollion, and others, will undoubtedly throw great light on the progress of civilization from Egypt to Greece, described in the half mythological, half historical tales of the latter country.

CECROPIA. See *Athens*.

CEDAR; a name given to several species of juniper, to a species of pine, the cedar of Lebanon, and to the *cupressus thuyoides*. It is an evergreen, and of great durability. The most celebrated kind is the

Cedar-Larch, or *Cedar of Lebanon* (*pinus cedrus*, L.), distinguished, by its strong, ramose branches, from all other trees of the same genus. The general character of the shoot, even when the tree is young, is singularly bold and picturesque, and quite peculiar to the species. The tree is a native of the coldest part of the mountains of Libanus, Amanus, and Taurus; but it is not now to be found in those places in great numbers. Maundrell, in his journey from Aleppo to Jerusalem, in 1696, could reckon only sixteen large trees, though many small ones. The forest of Libanus seems never to have recovered from the havoc made by Solomon's fourscore thousand hewers. Beautiful specimens of this noble tree are to be seen at Witton park, Zion-house, &c., in England, where it seems to have been introduced in 1683, and where, as professor Martyn observes, there are probably, at present, more cedars than in Palestine.

White-Cedar (*cupressus thuyoides*) is a small or middle-sized evergreen, naturally forming an elegant head. Its branches are not pendulous. Its leaves are of a delicate green colour. It is a native of North America, China, and Cochin China. In the United States, it occupies large tracts, denominated *cedar swamps*. The wood is soft, smooth, of an aromatic smell, and internally of a red colour. It is permanent in shape, and very durable, and is esteemed as a material for fences. Large quantities of shingles are made of it. It is a favourite material for wooden wares, or the nicer kinds of coopers' work.

Red or *Common Cedar* (*juniperus Virginiana*); a native of North America and the West Indies. It is distinguished by its leaves, growing in threes, and being fixed by their base, the younger ones lying upon each other, and the older ones spreading. The trunk is straight, and knotted by small branches. The heartwood is of a bright red, smooth, and moderately soft. This wood is in much request for the outsides of black-lead pencils. On account of its powerful fragrance, it is often used for the bottoms of drawers, because it resists the attacks of insects. Some years ago, it was in great esteem for wainscotting and cabinet-work, but has been much neglected since the introduction of mahogany. The name of *savin* is, in some places, improperly applied to this tree. Unlike the white cedar, it grows in the driest and most barren soils. For posts of buildings, it is much in request; but it is difficult to obtain it of large size.

CEFALONIA. See *Cephalonia*.

CELÆNO. See *Harpies*.

CELEBES; an island in the East Indian sea, of an irregular shape, about 500 miles long, and about 200 broad, called, by the natives and Malays, *Negree Oran Buggess*, and, sometimes, *Tanna Macassar*; square miles, about 90,000. It is divided into six states or kingdoms, viz., Goa, Bony, Wajoo, Sopin, Selindrin, and Mandar. Goa extends a considerable way along the west and south, and contains, besides Macassar, two Dutch forts, Bontyn, and Bulo Cumbo. The government is monarchical, and the king is called *karuang*, and, sometimes, *rajah Goa*.—Bony, or Pony, is E. of Goa, entirely under the influence of the Dutch, and is governed by a prince, called *pajong*, who is elected for life by seven *orancayos*, or nobles.—Wajoo, or Warjoo, or Tuadjoo, is situated N. of Bony, and is governed by a prince elected for life by the *orancayos*.—Sopin is situated in the centre of the island, towards the eastern side, to the E. of Bon.—Selindrin is of small consideration, and is N. W. of Sopin.—Mandar lies on the W. and N. W. coast. The inhabitants are Mohammedans.—The heat of this island would be excessive, if it were not moderated by abundant rains The trees are alway green; fruit and flowers grow in all seasons; jasmines, roses, carnations, and other beautiful flowers, grow without culture; orange-trees and citrons shade the ground, with mangoes, bananas, and other fruits. Cotton-trees cover the extensive plains. It produces no spice except pepper. The inhabitants raise a great number of cattle: the oxen are larger than those of Europe. In the forests are large herds of deer, wild hogs, and a great variety of monkeys, large and ferocious; some with tails, and some without; some walking upon four legs, others upon two. The principal articles which the Dutch obtain from this island are rice, gold, ivory, deals, and sandal wood; cotton, camphor, ginger, long pepper, and pearls. The Dutch are said to have had 370 towns and villages under their control. Their principal settlement is at Macassar. Lat. 2° N. to 5° 40′ S.; lon. 118° 40′ to 124° 15′ E.

CELESTINE. Two popes of this name are saints. The first was elected pope Nov. 3, 422, and followed Boniface I. There is a decretal letter of this pope extant, directed to the bishops of Vienna and Narbonne, prohibiting the bishops from wearing a dress distinguishing them from the people, and forbidding the choice of strangers for bishops, to the displeasure of their flocks. The consent of the people, of the clergy, and of the magistrate, he says, is necessary to a choice. He died April 6, 432. His letters are preserved in the collection of D. Constant, folio, and in the collection of the councils.

Celestine V. was also a saint. He was chosen pope July 5, 1294, before which time he was called *Peter of Murrhone*. He lived as a hermit on Monte di Magella, in continual fasting and penance, and was entirely unfit for the papal chair, on account of his utter ignorance of business and of the world. He never would have been chosen, had not the papal chair been vacant for twenty-seven months, on account of the cardinals being divided into two parties. When Celestine entered Aquila, he rode on an ass, led by two kings. He soon found the burden of business too heavy, and abdicated his dignity Dec. 13, 1294. Boniface VIII. succeeded him, and kept him prisoner till his death, May 19, 1296. The greatest simplicity marks the government of this pope. He is the founder of the Celestines (q. v.).

CELESTINES (from their founder, pope Celestine V., q. v.), the hermits of St Damian, a religious order, instituted about the middle of the thirteenth century, in Italy, followed the rule of St Benedict (q. v.), wore white garments with black capes and scapularies, and were devoted entirely to a contemplative life. In the beginning of the eighteenth century, the order was diminished to the number of ninety-six monasteries in Italy, and twenty-one in France. This society of gloomy monks appears recently to have become still smaller. In France, it no longer exists.

CELIBACY [*written by a Catholic*].* One of the sublime ideas of the Catholic church is its veneration of chastity This places Christianity in the most striking opposition to the sensual religions of the pagan world. Whilst the pagans lowered their gods

* The above article, written by a Catholic, presents the views entertained on the subject of celibacy by the members of that communion. To those not educated in that church, it appears difficult to comprehend why a rule of life not enjoined by any express command or divine law, and which contravenes the dictates of nature and the obligations of society, should be regarded as of such importance to the excellence of the priesthood. That it would attach them more devotedly to the secular interests of the church, there can be no doubt; but that they would be as capable of ministering to the spiritual necessities of the people as those who are experienced in the feelings of the people, through their social connexions, we should find it very difficult to believe.

to the human standard, Christianity directed men's views to heaven, and idealized human nature. St Paul (1 Cor. 7) recommends virginity, without condemning matrimony. The Catholic church respects matrimonial chastity, but esteems virginity a higher virtue, as a sacrifice of the pleasures of this life to purity of soul, as the victory of the moral nature over the physical. With these sublime views of this virtue, it is not wonderful that it was required of the priests who officiate in the high mystery of the eucharist. From the time of the apostles, it became a custom in the church for bishops, priests, and deacons to renounce the joys of matrimonial love at their consecration, and to devote themselves entirely to the duties of their office. One point only was disputed, whether clergymen were to be merely prohibited from marrying, or whether even those who were married before their consecration, should be required to separate themselves from their wives. At the general council of Nice, several bishops proposed that the bishops, priests, and deacons, who had received the holy consecration, should be directed, by an express ordinance, to give up their wives. But Paphnutius, bishop of upper Thebais, contended that cohabitation with a wife was a state of chastity. It was sufficient, he said, according to the ancient traditions of the church, that clergymen should not be permitted to marry; but he who had been married before his consecration ought by no means to be separated from his lawful wife. As it became the general opinion, that a clergyman could not marry, it soon became the general practice to refuse consecration to married men. By this means, uniformity was effected. As for the bishops, it soon became a matter beyond dispute. After the institution of monachism had become firmly established, and the monks were regarded with veneration, on account of their vow of perpetual chastity, public opinion exacted from the secular clergy the same observance of celibacy. The holy father Epiphanius assures us that, by the ecclesiastical laws, celibacy was commanded, and that, wherever this command was neglected, it was a corruption of the church. The particular council of Elvira commanded all bishops, presbyters, deacons, and subdeacons, to abstain from their wives, under penalty of exclusion from the clergy. In the Western church, celibacy was rigorously required. Pope Cyricius, at the end of the fourth century, forbade the clergy to marry, or to cohabit with their wives, if already married. At the same time, the monks received consecration, which increased the conformity between them and the secular clergy still further, and indirectly obliged the latter to observe celibacy. Several popes and particular councils repeated this injunction. The emperor Justinian declared all children of clergymen illegitimate, and incapable of any hereditary succession or inheritance. The council of Tours, in 566, issued a decree against married monks and nuns, declaring that they should be publicly excommunicated, and their marriage formally dissolved. Seculars, deacons, and subdeacons, who were found to dwell with their wives, were interdicted the exercise of spiritual functions for the course of a year. In Spain, the bishops were ordered to enforce celibacy upon their abbots, deacons, &c., once a-year, in their sermons; for, in that country, many priests, formerly Arians, and newly converted, refused to give up their wives, conformably to the requisitions of the Catholic church.

As in other points, in this, also, the Greek church dissented from the Roman. The (Trullan) council of Constantinople, in 692, in its thirteenth canon, declares, "Having heard that the Roman church has ordered the priests and deacons to relinquish their lawful wives, we, assembled in this council, hereby decree, that priests and deacons, according to the ancient custom of the church, and the institution of the holy apostles, may live with their wives like the laity. We hereby forbid any one to refuse the consecration of a priest or deacon on account of his being married, and cohabiting with his wife, after he has requested consecration. We will by no means be unjust to marriage, nor separate what God has united." These regulations are still in force in the Greek church; and, while celibacy is required of the bishops and monks, priests and deacons, if married before consecration, are allowed to continue in the state of matrimony.

This is not a reason for saying that the *Roman* church introduced celibacy; she has only retained it, as an old apostolical tradition, to which she has added the rule, not to consecrate married men unless the wife enter a religious order. As no one has a right to demand to be consecrated a priest, the Roman church has, by this addition, violated no one's right. The Western church had new reasons for enjoining celibacy, when the system of benefices began to be organized. At first, the officers of the church lived on the voluntary gifts of the faithful. When the church acquired wealth, lands, and tithes, the revenue and estates of all the churches belonging to the diocese of a bishop were considered as one whole, the administration and distribution of which depended on the bishop. But, in the seventh, eighth, and ninth centuries, a particular sum was taken from the common stock for each officer, the bishop not excepted. This constitution of the church was similar to that of the state, in which feudatories performed military and other services, in consideration of the usufruct of certain lands. Even the name was the same. The possessions of the feudatories were called *benefices*, as well as those of the clergy. If the clerical benefices and employments had become hereditary, as was the case with the lay benefices, we should have seen a hereditary ecclesiastical caste, similar to that of the nobility, which has been transmitted to us from the middle ages, as a caste of warriors and civil officers. We should have seen hereditary priests, hereditary bishops, and a hereditary pope. The ruinous consequences, moral and political, which would have resulted from such a state of things, are easily conceived. All the feelings and principles of a pure and divine religion would have disappeared in such an empire of priests. The most absolute despotism would have been established over the nations, and every attempt of the commons to attain a higher stand in political society would have been frustrated. When the canons in Wales afterwards abandoned celibacy, it was soon observed that they had succeeded in making their benefices hereditary, by intermarriages between their sons and daughters. The fate of Wales would have been that of all the Christian nations of the West, if the marriage of priests had been allowed.

Whilst, however, the church persevered in commanding celibacy, she had to struggle with the opposition of a corrupt clergy. The council of Narbonne, in 791, forbade the clergy to have any females living with them, even such as former rules had permitted. The same was ordered by the council of Mentz, 888. By the council of Augsburg, every clergyman was forbidden, under penalty of dismission, either to marry, or to cohabit with his wife, if already married, or to retain female companions who had been introduced under the name of *sisters* (*subintroductas*); and the bishop was authorized, when suspicious women were found in the houses of clergymen, to drive them out with whips, and cut off their hair. In the council of Canterbury, king Edgar himself delivered a speech on the scandalous life of the clergy, whose

houses, as he said, might well be considered as brothels. Soon afterwards, a great number of canons and priests were dismissed, whose places were given to monks. In the council at Erham, in 1009, the clergy were directed anew to dismiss their wives. To those who abstained, it was even promised, that they should be treated like nobles by birth. Leo IX. ordered that women at Rome, transgressing with priests, should be slaves in the Lateran for life. Adalbert, archbishop of Hamburg, excommunicated the concubines of priests, and had them ignominiously turned out of the city. Pope Victor II. dismissed several bishops on account of their irregularities. Notwithstanding all such prohibitions, it appeared impossible to maintain the law of celibacy in force. In 1061, the Lombard bishops, most of whom had concubines, themselves elected Nodolaus, bishop of Parma, afterwards Honorius II., antipope, merely because he did not live in celibacy; and it was, therefore, hoped that he would not insist on the observance of the prohibitory law. Add to this, that most of these clergymen, living with concubines, in violation of canonical laws, obtained their places by simony, and you have a true picture of the church in those days. The necessity was urgent that a reformer of the church should arise. He appeared in Gregory VII., who, like all men of great genius, has a right to be judged in reference to the spirit of his age. In order to reform the corrupted discipline of the church, he was obliged to encounter the simony and licentiousness of the clergy. The former he checked by opposing the emperor's right of investiture, and enforced the laws of celibacy by new regulations. In the council of 1074, at Rome, he ordered, that all married clergymen, and all laymen who should confess to them, hear mass of them, or be present at any divine service performed by them, should be excommunicated. When the bishop of Coire began to read this decree to the synod in Mentz, the clergy assailed him with reproaches and blows, so that he narrowly escaped with his life. They declared that they did not pretend to be angels, and would rather give up their priesthood than their wives. Gregory, nevertheless, succeeded, as he was supported by the most ancient and most undoubted canons. After Gregory's decease, the church continued in the same course. The prohibitions were repeated, as well as the rules of caution concerning domestic life. Yet transgressions of this hard commandment were very frequent, particularly in the fifteenth and sixteenth centuries. In Petrarca's works are many complaints of the licentiousness of the clergy at the pope's court in Avignon, where Petrarca lived for some time. In the accounts of the council of Basle, it is stated that many cardinals present there lived openly with their concubines. In one of the chronicles of the mark of Brandenburg, we are informed that, at a feast, a question arose whether the bishop's concubine should precede the other ladies or not.*

The reformation followed. It recognised no sacrificing priests; virginity was esteemed no higher than conjugal fidelity; vows of chastity were considered no longer obligatory; and, as the Protestant clergy were subject either to the state or the religious communities, it was no longer to be feared that they would, by their own authority, make the benefices hereditary. Luther did not at first go the whole length of these changes. He thought the prohibition of matrimony unjust; yet he believed that the monks, who were bound to celibacy by their vows, ought to observe them. He wrote to Spalatin, Aug. 6, 1521, "Our Wittenbergians intend, too, to give wives to the monks; but I shall not suffer myself to have one forced upon me." Bartholomew Bernhardi, a monk, head of the religious establishment of Kemberg, was the first of the clergy who married (in 1521), and most of the Lutheran divines imitated him. When the papal legate, cardinal Campeggio, recommended the punishment of the married priests, this only widened the breach between the old and new church. Luther declared, in 1524, that he was not made of wood and stone, and, in 1525, married the nun, the consecrated virgin, Catharine von Bora (q. v.).

Celibacy was the weak side of the Catholic church as many divines went over to the reformed church under pretence of a change in their religious sentiments, but, in reality, to be enabled to marry. The reformed princes offered their clergy the alternative, either to marry their concubines, or to put them away. The latter supposed a self-denial, which could not be expected from one who had lived in concubinage, and a change of religion was the necessary consequence of marriage. Some Catholics wished this weak spot in their church to be removed. At the council of Salzburg, in 1562, the bishops deliberated what measures ought to be proposed at the council of Trent, and resolved to vote for the marriage of the clergy. The duke of Bavaria likewise insisted upon the marriage of the priests. The emperor, the electors, and many other princes, directed their envoys to demand it. The king of France also desired the marriage of the clergy, or, at least, a maturer age for consecration. But the majority at Trent (sess. 24, can. 9) decided for celibacy, observing that God would grant the prayers of those who prayed earnestly for chastity, and would not suffer them to be tempted beyond their strength. The provisions, in regard to celibacy, are as follows:—The clergy of the Greek church, who were married before their consecration, are allowed to continue in a state of matrimony. The priest, however, must abstain from his wife three days before every celebration of the mass. Of the Roman clergy absolute celibacy is required; yet the four lower orders are permitted, on giving up their benefices, to quit the clerical profession, and to marry. But, from the subdeacons upwards, celibacy is commanded absolutely; except that the pope may give permission to retire from the clerical office, and, in consequence, to marry. The penalties for transgressing the rules of celibacy are numerous. The wife must be dismissed, and penance undergone for the offence. The offender is forbidden to perform the ecclesiastical functions belonging to his degree, and cannot receive the higher consecration, as he becomes what is called *irregular*. Yet, after penance, this irregularity may be removed by dispensation from the bishop. Finally, he becomes excommunicated by the very act of his marriage, and must, on this account, also, have recourse to the bishop, to be received again into the communion. In Germany, by the terms of the peace of Westphalia, a Catholic clergyman who marries, loses his benefice and his rank in the church, without loss of reputation, however, if his marriage be only a previous step to his adoption of the Protestant faith. Persons already married can be consecrated as clergymen only on condition of their taking a vow of chastity, to which the wife has given her consent. She must also enter some religious order.

The rule of celibacy has been more strictly observed in the Catholic church since the reformation than it was before. One reason of this is, that many

* In Abbot's Letters from Cuba (Boston, 1829, p. 15), it is stated, that most of the priests on that island have families, and speak of their children without scruple, and will sometimes even reason on the subject, and defend the practice. The case is much the same in a great part of South America.

incontinent clergymen have left the Catholic church, and entered into one which allowed them to marry. Another reason is, that the Protestant reformation aroused the attention of the Catholic church to the necessity of a reform in its own body, and the observance of a stricter discipline. Hence few such public scandals have occurred as in former times, and transgression has been followed by immediate punishment. Yet it is not to be denied, that the rule of celibacy is often violated. Such transgressions are to be expected, particularly at a time when education and so many other circumstances tend to increase the influence of luxury; yet the far greater part of the Catholic clergy respect the rule of celibacy at the present day. Among the reasons against requiring celibacy in the clergy, is the increasing scarcity of men willing to devote themselves to a profession which requires such strict self-denial.

CELL; generally employed to designate an apartment used as a storehouse for wines, &c., and commonly under ground. The same term has various applications under different circumstances. Thus *cella* was used, by the Roman poets, to signify the lodge or habitation of common prostitutes, these being anciently under ground (see *Juvenal*, sat. vi. ver. 121), having the names of the inmates over the doors. The name of *cell* was also used for the lodgings of servants, among the Romans for the apartments of the public baths, for the *adyta* or inmost and most retired parts of the temples, where the images of the gods were preserved. The term *cell* was also applied to a lesser or subordinate minster, dependent upon a greater, by which it was erected, and under whose government it remained. The great ancient English abbeys had generally such cells in distant places, which were accountable to, and received their superiors from them. The apartments or private dormitories of monks and nuns are also called *cells*.

In technology, the term *cell* is employed very frequently to signify any small compartment into which substances are divided; thus the hexagonal chambers of the honey-comb are called *cells*, as in botany the cavities, separated by partitions in the pods, husks, or seed-vessels of plants, which are said to be *unilocular*, *bilocular*, *trilocular*, *&c.*, according to the number of cells.

In anatomy, it is applied to various small cavities, such as the air-cells, or pulmonary vesicles, the adipose cells, or spaces in the membrane which retains the fat, &c. The loose, inflatable texture which unites and surrounds all the parts and organs of the body, has the name of *cellular*, from its being made up of a succession of these little membranous interstices.

CELLARIUS, Christopher, one of the most learned philologists of the 17th century, was born in 1638. After he had studied at several German universities, he taught moral philosophy and the Oriental languages at Weissenfels. In 1673 he was made rector of the school at Weimar, and afterwards of the seminaries at Zeitz and Marseburg, and, finally, professor of eloquence and history at Halle, where he died in 1707. He published a great number of ancient authors, with learned annotations and very accurate indexes, as, for instance, the letters of Cicero and of Pliny, Cornelius Nepos, Curtius, Entropius, Sextus Rufus, Velleius Paterculus, the twelve ancient panegyrists, Minucius Felix, Silius Italicus, &c. His own compositions relate to ancient history and geography, Roman antiquities, and the Latin language.

CELLINI, Benvenuto; a sculptor, engraver, and goldsmith; distinguished particularly by his works in gold and silver, which have become very rare, and are sold at present at immense prices. He was born at Florence in 1500, and died there in 1570. Of a bold, honest, and open character, but vain and quarrelsome, and impatient of encroachment and dependence, he was often entangled in quarrels, which frequently cost his antagonists their lives. He himself incurred great dangers, was put into prison, and was saved only by his boldness and the powerful protectors whom his talents as an artist procured him. At the siege of Rome (if we believe his own account, given in his autobiography), he killed, with one cannon shot, the constable of Bourbon, and, with another, the prince of Orange. He was afterwards imprisoned on the charge of having stolen the jewels of the papal crown, which were intrusted to him during the siege, and was released only by the interference of Francis I., whose court he visited, and executed there several works. He afterwards returned to Florence, and, under the patronage of Cosmo, made a Perseus with the head of Medusa in bronze, which is still an ornament of the market-place; also a statue of Christ, in the chapel of the Pitti palace, besides many excellent dies for coins and medals. In his fifty-eighth year, he wrote his own life in Latin, with equal candour and vanity. It has been translated, in a masterly manner, by Goethe, into German. There is also an English translation by Dr Nugent, 1771; new edition by Thomas Roscoe, 1822. It contains striking descriptions of Cellini's own adventures, and of the characters of the persons with whom he came in contact. Among his other writings, the most important are *Due Trattati, uno intorno alle otto principali Arti dell' Oreficeria, l'altro in Materia dell' Arte della Scoltura* (best edition, 1731). His style is free, strong, and original, and the academy della Crusca often quotes him as a classic.

CELLULAR SUBSTANCE, or CELLULAR MEMBRANE (*tela cellulosa* or *mucosa* of Latin writers), is the medium which connects and supports all the various parts and structures of the body. Any person may gain a general notion of this substance by observing it in joints of veal, when it is inflated by the butchers. It consists of an assemblage of fibres and *laminæ* of animal matter, connected with each other so as to form innumerable cells or small cavities, from which its name of *cellular* is derived. It pervades every part of the animal structure. By joining together the minute fibrils of muscle, tendon, or nerve, it forms obvious and visible fibres. It collects these fibres into large *fasciculi*, and, by joining such *fasciculi*, or bundles, to each other, constitutes an entire muscle, tendon, or nerve. It joins together the individual muscles, and is collected in their intervals. It surrounds each vessel and nerve in the body, often connecting these parts together by a firm kind of capsule, and, in a looser form, joining them to the neighbouring muscles, &c. When condensed into a firm and compact structure, it constitutes the various membranes of the body, which, by long maceration in water, may be resolved into a loose, cellular texture. In the bones it forms the basis or ground-work of their fabric, a receptacle, in the interstices of which the earth of bone is deposited. As cellular substance is entirely soluble in boiling water, it is considered, by chemists, as that peculiar modification of animal matter termed *gelatine*. In consequence of its solution by the united agencies of heat and moisture, the muscular fibres separate from each other, and form the other structures of the body. This effect is seen in meat which is subjected to long boiling or stewing for the table, or, indeed, in a joint which is merely over-boiled. It forms a connexion and passage between all parts of the body, however remote in situation or dissimilar in structure; for the cells of this substance everywhere communicate, as we may collect from facts of the most common and

familiar occurrence. In emphysema, where air escapes from the lungs wounded by a broken rib into the cellular substance, it spreads rapidly from the chest into the most remote parts of the body, and has even been known to gain admission into the eye-ball. A similar diffusion of this fluid may be effected by artificial inflation.

CELSUS, Aurelius Cornelius, lived, probably, under the reign of Augustus. He has been called the *Roman Hippocrates*, because he imitated the Greek physician, and introduced the Hippocratic system into Rome. He also wrote on rhetoric, the art of war, and agriculture. He is, however, best known as a medical writer. His style is elegant, concise, and, nevertheless, very clear. His work on medicine is an inexhaustible source, from which other good authors have drawn materials for writings, both medical and surgical. He has furnished subsequent writers with a multitude of authorities for the support of their different theories, but has suffered much arbitrary interpretation. Hippocrates and Asclepiades are the two authors whom he has followed most. More than fifty-nine editions of his eight books *De Medicina* had appeared in 1785; the first at Florence, 1478, fol.: the best is by Krause, Leipsic, 1766: that of Targa was printed at Padua, 1769, 4to, and one at Verona, 1810, 4to.

CELTÆ (they called themselves, also, *Gael*, or *Gales;* see *Gael*); one of the four chief nations which inhabited Gallia. Their territory extended from the extreme point of Brittany to the Rhine and the Alps. The Romans, therefore, called the whole country *Celtica*, or *Galatia*. They left Asia at some distant period, and, at the time of Tarquinius Priscus, came, under Bellovesus, to Upper Italy, and large numbers of them spread over several countries of Europe. In Spain, they became mingled with the Iberians, whom they conquered. Internal wars weakened them; and commerce with the Romans, and with the people of Marseilles, made them more civilized. The Italian Celtæ were subjected, 220 B. C., by the Romans. The Boii united themselves with the Helvetii; the Illyrian Celtæ with the Illyrians. Their government was aristocratical. The nobles formed a national assembly. The commons were regarded as little better than slaves. They were large, and of great bodily strength, impetuous in their attacks, but not well able to endure hardships. A huge sword, generally of copper, was their chief weapon. Their priests, the Druids (q. v.), enjoyed the greatest authority.

CELTES, Conrad; born, in 1459, at Protuch, in Franconia. His original name was *Meissel*, which he changed into *Celtes Protucius*. He ran away from his parents, and studied in Cologne. In 1484 and 1485, he studied under the tuition of Rodolph Agricola, at Heidelberg, and became a philologist and Latin poet. He then travelled to Italy, where he attended the lectures of the most learned teachers of his time. On his return through Illyria, Hungary, and Poland, he was taught astronomy and astrology by Albertus Brutus, and met with the most favourable reception at the German courts. In Nuremburg, he was crowned by the emperor Frederic III. (1491), on account of the reputation which he had acquired by his Latin poems, being the first German poet who received this honour. He afterwards travelled for ten years, visiting all the universities in Germany, and found, at length, a resting-place in Vienna, where Maximilian I. appointed him, in 1501, professor of poetry and rhetoric, and president of the faculty established for the study of classical antiquities. He left a history and description of Nuremburg, a poem on the situation and manners of Germany, several philosophical, rhetorical, and biographical works, and a number of poems. He considered the study of languages, not, like other philologists of his time, as an object of pursuit in itself, but only as a means for obtaining an acquaintance with those sciences which have a more immediate bearing on the business of life, among which he placed history and geography first. His plan for a great literary society (*sodalitas Celtica*), for which he had already obtained grants of privileges from the emperor, was interrupted by his death in 1508. Only the Rhenish society, which he founded in Heidelberg, outlived him.

CELTIBERI, or CELTIBERIANS; inhabitants of Celtiberia, a country along the Iberus, in the northeast part of Spain. They formed the most numerous tribe in Spain, and originated from Iberians mixed with Celts. They were brave, and their *cuneus* was formidable even to the Romans. They despised agriculture. After a long resistance to the Romans, they were, at last, in the Sertorian war, subjected to their sovereignty, adopted their manners, language, dress, &c. They were divided into six tribes—the Bellones, Arevaci, Peleudones, north of the Durius; and the Lusones, Belli, and Ditthi, more to the south.

CEMENTATION; a chemical process, in which a metal (and often other bodies) is placed in connexion with other substances, often in layers (*stratum super stratum*), in close vessels, that the former may be separated from its combinations, or changed (frequently oxydated), at a high temperature. The substance with which the metal or other body is surrounded is called *cement-powder*. In cementing gold, the alloy is beaten into thin plates, and placed in alternate layers, with a cement containing nitrate of potass and sulphate of iron. The whole is then exposed to heat, until a great part of the alloying metals are removed by the action of the nitric acid liberated by the nitre. Iron is cemented with charcoal-powder and other substances, and thereby converted into steel. Glass is changed, by cementation with gypsum, into Reaumur's porcelain. Copper is cemented with a powder of calamine and charcoal, and thereby converted into brass. The copper obtained from the sulphate of copper, by precipitation with iron, is called *cement-copper*.

CEMENTS. The substances used for producing cohesion between different materials are very various. They are mostly soft or semi-fluid, and harden in the course of time. The thinner the strata of cement, the firmer it will hold. The number of cements employed is very great. We can mention only a few. The joints of iron pipes, and the flanges of steam-engines, are cemented with a mixture composed of sulphur and muriate of ammonia, together with a large quantity of iron chippings. The putty of glaziers is a mixture of linseed oil and powdered chalk. Plaster of Paris, dried by heat, and mixed with water, or with rosin and wax, is used for uniting pieces of marble. A cement composed of brickdust and rosin, or pitch, is employed by turners, and some other mechanics, to confine the material on which they are working. Common paint, made of white lead and oil, is used to cement China-ware. So also are resinous substances, such as mastic and shell lac, or isinglass dissolved in proof-spirit or water. The paste of bookbinders and paper-hangers is made by boiling flour. Rice-glue is made by boiling ground rice in soft water to the consistence of a thin jelly. Wafers are made of flour, isinglass, yeast, and white of eggs, dried in thin layers upon tin plates, and cut by a circular instrument. They are coloured by red-lead, &c. Sealing-wax is composed of shell lac and rosin, and is commonly coloured with vermilion. Common glue is most usually employed for uniting wood, and similar porous substances. It does not answer for

surfaces not pervious to water, such as metals, glass, &c. The cements mostly used in building are composed of lime and sand. Lime is procured by burning substances in which it exists in combination with carbonic acid, such as limestone, marbles, chalk, and shells. By this process, the carbonic acid is driven off, and quicklime is obtained. The quicklime is slaked by mixture with water, after which it swells and cracks, becomes hot, and assumes the form of a white and impalpable powder. This is a hydrate of lime, and contains about three parts of lime to one of water. When intended for mortar, it should be immediately mixed with sand, and used without delay, before it imbibes carbonic acid anew from the atmosphere. The lime adheres to and unites the particles of the sand. Cements thus made increase in strength and solidity for an indefinite period. Fresh sand, wholly silicious and sharp, is the best. That taken from the sea-shore is unfit for making mortar, as the salt is apt to deliquesce and weaken the mortar. The amount of sand is always greater than that of the lime. From two to four parts of sand are used, according to the quality of the lime and the labour bestowed on it.

Water cements, called also *Roman cements*, harden under water, and consolidate almost immediately on being mixed. Common mortar dissolves or crumbles away, if laid under water before it has had time to harden; but certain rocks, which have an argillaceous as well as a silicious character, communicate to lime or mortar the property of hardening in a very few minutes, both in and out of water. The ancient Romans, in making their water cements, employed a peculiar earth, obtained at the town of Puteoli. This they called *pulvis Puteolanus*. It is the same that is now called *Puzzolana*. It is evidently of volcanic origin. The Dutch, in their great aquatic structures, have mostly employed a substance denominated *tarras*, *terras*, or *trass*, found near Andernach, in the vicinity of the Rhine. It is said to be a kind of decomposed basalt, but resembles Puzzolana. It is very durable in water, but inferior to the other kinds in the open air. Baked clay and the common greenstone afford the basis of very tolerable water cements, when mixed with lime. Some of the ores of manganese may be used for the same purpose. Some limestones, calcined and mixed with sand and water, also afford water cements, usually in consequence of containing some argillaceous earth. Some cements, of great hardness and permanency, have been obtained from mixtures, into which animal and vegetable substances enter, such as oil, milk, mucilage, &c. The name of *maltha* or *mastic* is given them. They are not much used.

CEMETERY. In the article *Burying-Places*, we have given the history of the custom of interring the dead, and shall only mention, in this place, two cemeteries, perhaps the most interesting which ever existed. One of them is the common place of burial of the ancient Egyptians, which was situated beyond the lake Acherusia, or Acharejish, the name of which signified the last condition of man, and which probably is the foundation of the Greek fables respecting lake Acheron. On the borders of lake Acherusia, a tribunal, composed of forty-two judges, was established, to inquire into the life and character of the deceased. Without this examination, a corpse could not be carried to the cemetery beyond the lake. If the deceased had died insolvent, the court adjudged the corpse to his creditors, in order to oblige his relations and friends to redeem it. If his life had been wicked, they refused his body the privilege of solemn burial, and it was consequently carried and thrown into a large ditch made for the purpose, which received the appellation of *Tartar*, on account of the lamentations which this sentence produced among the surviving friends and relations. The Greek *Tartarus* had its origin in this Egyptian Tartar. If no accuser appeared, or the accusations were found groundless, the judges decreed the regular burial, and the eulogium of the deceased was pronounced amongst the applauses of the bystanders. In this, his talents, virtues, accomplishments, every thing except his rank and riches, were praised. To carry the corpse to the cemetery, it was necessary to cross the lake, and to pay a small sum for the passage. This circumstance also was transplanted into the Greek mythology. The cemetery was a large plain, surrounded by trees, and intersected by canals, to which was given the appellation *Elisout*, or *Elisiæns*, meaning *rest*. Every one recognizes, in this description, the Greek Charon, his boat, his ferry-money, and the Elysian fields. The whole ceremony of interment seems to have consisted in depositing the mummy in the excavation made in the rock, or under the sand which covered the whole *Elisout*: then it seems that the relations of the deceased threw three handfuls of sand, as a sign to the workmen to fill up the cavity, after uttering three loud farewells. See *Lectures on Hieroglyphics and Egyptian Antiquities*, by the marquis Spineto, London, 1827.

Another cemetery of great interest is that of Père Lachaise (see *Lachaise*), in the north-west part of Paris, not far from the *barrière des Amandiers*. This city of the dead has a superficies of more than fifty-one *arpents*, and contains a great variety of tombs, some of a touching simplicity, with the marks of unaffected grief, while others remind us of the words of St Augustine: "*Curatio funeris, conditio sepulturæ, pompa exequiarum, magis vivorum solatia quam subsidia mortuorum.*" Columns, obelisks, pyramids, funeral vases, monuments of all kinds, and flowers, cover the cemetery, but point out a few only of those who rest in this last abode of many generations. Here repose Heloise and Abelard, the conqueror of Esslingen, Delille, Moliere, La Fontaine, and Foy, amid a crowd of philosophers, artists, warriors, politicians, and individuals from the ordinary walks of life. From this place you look down on the bustle of the gayest city in the world. A chapel in the burying-ground affords the finest view of Paris.

CENCI, Beatrice, called the *beautiful parricide*, was the cause of the extermination of the noble family of Cenci. Muratori, in his Annals (vol. 10, pt. 1, 136), relates the story as follows: Francesco Cenci, a noble and wealthy Roman, after his second marriage, behaved towards the children of his first marriage in the most shocking manner, procured the assassination of two of his sons, on their return from Spain, by banditti, and, what is still more horrid, seduced and debauched his youngest daughter, a maiden of singular beauty. Beatrice discovered this shocking crime to her relatives, and even sought to obtain protection from pope Clement. It appears, however, that this was not granted: for, when the guilty father continued his former treatment, with aggravated wickedness, she joined with her brother Giocomo, and procured the death of the monster, by two assassins, as he slept. The guilty parties were discovered, confessed the murder on the rack, and were condemned by the pope to be torn to pieces by horses. In vain did the learned Farinaceus (celebrated for his *Quæstiones*) exert himself to obtain a mitigation of their punishment by a lively representation of the depravity of the deceased. According to other accounts, Beatrice and her relatives appear to have had little or no share in the murder of the old Cenci; but a tissue of villany and baseness gained belief to the false testimony of two banditti against the Cenci family. So much is certain, that, Sept. 11,

1599, Beatrice Cenci and her sister were executed with a sort of guillotine, called *mannaia*. Giacomo was killed with a club; the younger brother was pardoned on account of his youth; but the estates of the family, to which belonged the villa Borghese, since so famed for its treasures of art, were confiscated, and presented by the reigning pope, Paul V., of the house of Borghese, to his family. In the palace of Colonna, at Rome, travellers are shown an excellent painting, said to be by Guido Reni, as the portrait of the unfortunate parricide; and this charming picture of the beautiful girl has been the means of spreading over all Europe the tale of horror connected with it. Percy Bysshe Shelley has made the Cenci the subject of a drama.

CENIS, Mount; a mountain belonging to the Alps, in the county of Maurienne, in Savoy. Its height is stated to be 8670 feet above the level of the sea. It is famous for the road which leads over it from Savoy to Piedmont. (See *Alps, Roads over*). On the mountain is a plain, called *Madeleino*, and a lake, with an hospital, called *La Ramasse*. The lake contains trouts of sixteen pounds' weight. This plain is surrounded by higher peaks covered with snow (See *Alps*). Benvenuto Cellini's journey over the Alps, in the sixteenth century, Evelyn's, in the seventeenth, lady Mary Wortley's and Horace Walpole's, in the eighteenth, are all interesting; but the danger has been removed by Napoleon's road.

CENOBITE. See *Anchoret*, and *Monastery*.

CENOTAPH (from the Greek Κενοτάφιον, called also Κενήσιον); a monument erected in honour of a deceased person, but not containing his body, as is implied from the terms κενὸς, empty, and τάφος, a tomb. Some of these monuments were erected in honour of persons buried elsewhere, others for persons whose bodies were not interred. The ancients believed that, when the body was not buried, the soul could not be admitted into the abodes of the blessed. When a body could not be found, it was supposed that some rest was afforded to the sufferer by erecting him a cenotaph, and calling out his name three times with a loud voice. Such monuments were distinguished by a particular sign, usually a piece of a shipwrecked vessel, to denote the death of the deceased in a foreign land. The Pythagoreans erected cenotaphs to those who had quitted their sect, as if they were actually dead.

CENSORS were magistrates at Rome, who kept a register of the number of the people and of their fortune, and (from 442 B. C.) regulated the taxes. At the same time they watched over the manners of the citizens. They were chosen every fifth year. This institution, at the period of simple manners in which it was founded, may have been beneficial, but is wholly inconsistent with our ideas of individual liberty. In the different governments of Europe, censors are persons appointed by the government to administer the censorship of the press (q. v.).

CENSORSHIP OF BOOKS. See *Books, Censorship of*.

CENSUS; with the Romans, one of the most important institutions of the state, and the foundation of its future greatness. It was introduced by king Servius Tullius, B. C. 577. All Roman citizens, both in the city and in the country, were obliged to report the amount of their property, the number of their children, slaves, &c., under penalty of losing their property and their liberty. According to the statement thus given in, Servius Tullius divided the citizens into six classes, and those again into centuries (q. v.). The first class consisted of those whose fortunes amounted respectively to at least 100,000 *asses* or pounds of copper. The property of the second was at least 75,000; that of the third, 50,000; that of the fourth, 25,000; that of the fifth, 11,000 *asses*; all the rest belonged to the sixth class. (See *As*). Each class had a particular kind of arms a particular post in the army, &c. This division produced the most important consequences for Rome. At an earlier period, the poor citizens were obliged to pay the same taxes, and render the same services in war, as the rich; and the most important branches of the public administration were in the hands of the ignorant and passionate mob. The heaviest burdens in war and in peace were, by this institution, transferred to the rich, and the chief direction of public affairs was placed in the hands of the first class, which contained, according to the rule of division established by Servius Tullius, as many centuries as all the rest. The citizens of the lowest class, who had no property, or very little, were hardly counted as a class, so that the ancient authors often mention only five classes. In the course of time, the original divisions suffered some alterations, but the institution remained essentially the same. This census was repeated every fifth year, at first by the kings, afterwards by the consuls, and, finally, by the censors. At a later period, however, it was not always taken at a fixed time, and was often entirely omitted. After the termination of the census, an expiatory sacrifice was offered, called *suovetaurilia*.

CENTAURS; an ancient barbarous people in Thessaly, on mount Pelion. According to the fable, they were the children of Centaurus, a son of Apollo, and the mares of Magnesia, or of Ixion and the cloud (See *Ixion*). They are said to have been half horse and half man, and the fable is explained in this manner: The Centaurs first practised the art of mounting and managing horses. In the time of the Thessalian king Ixion, a herd of wild bulls on mount Pelion committed great devastations in the adjacent country. Ixion offered a great reward to whoever should destroy them: in consequence of which, the Centaurs trained horses to bear them on their backs, and slew the bulls. Mythology relates the combats of the Centaurs with Hercules, Theseus, and Pirithous. The latter, at the head of the Lapithæ, another Thessalian nation, their hereditary enemies, entirely defeated them, killed many, and drove them from Pelion. The Centaurs Nessus, Chiron, and others, are famous in ancient fable. The latter is often mentioned under the name *Centaurus*.

CENTAURY. There exist two plants of this name, used in medicine: *small centaury* (*chironia centaurium* of Lamarck), indigenous in Europe, growing abundantly everywhere; and *American centaury* (*chironia angularis* of Willdenow), extensively distributed throughout the United States. Both are annual plants, and esteemed as tonics and febrifuges; the latter, however, is preferred by the American physicians. It is also much used in domestic practice as a prophylactic against autumnal fevers, in strong infusions, in large and repeated doses.

CENTIARE; a French measure, the hundredth part of an *are* (q. v.); thus, also, according to the new French division of measures and weights, we have *centigramme, centilitre, centime, centimetre*, the hundredth part of a *gramme, litre, franc, metre*. See *French Decimal System*.

CENTIGRADE. See *Thermometer*.

CENTIMANI. See *Briareus*.

CENTIPED (*scolopendra*, L.); a genus of insects belonging to the order *myriapoda*, C. They are distinguished by having *antennæ* of fourteen joints and upwards, a mouth composed of two mandibles, a quadrifid lip, two *palpi*, or small feet, united at their base, and a second lip, formed by a second pair of dilated feet, joined at their origin and terminated by a strong hook, having an opening beneath its point.

through which a poisonous fluid is thrown out. The body is long, depressed, and membranous, each ring being covered by a coriaceous or cartilaginous plate, and mostly having one pair of feet: the last is usually thrown backwards, and elongated in form of a tail. These insects are nocturnal and carnivorous, and uniformly endeavour to escape from the light. They conceal themselves under the decayed bark of trees, the decayed timbers of buildings, among stones, lumber, and rubbish, whence they sally forth at night in search of prey. The centiped is one of the greatest pests to be encountered in the West India islands, and throughout the hot parts of the American continent. The materials of which the houses are constructed, and the rapid decay to which timber is subject in such climates, afford these noxious insects excellent hiding-places, and they multiply with great rapidity. The utmost vigilance, even in the most cleanly houses, is necessary to prevent these creatures from finding their way into the beds, which they often do notwithstanding all the care that is taken to prevent them. They always attempt to escape when a light is brought into the room. They run with considerable swiftness, but are quite ready to stand on the defensive, and bite with severity. This disposition to bite upon the slightest provocation renders them very dangerous when once they have entered a bed; the least movement of the sleeper over whom they may be crawling, and who can scarcely fail to be disturbed by their sharp-pointed feet or claws acting upon his skin, will ensure a venomous bite, which will be frequently repeated if the centiped be not speedily dislodged. The bite is exceedingly painful at the moment, and is followed by a high degree of local inflammation, and a fever of great irritation. Where the insect is large, and the bite severe, life is much endangered, and not unfrequently lost, especially if the sufferer be of delicate and irritable habit of body. The immediate application of a cupping-glass, or any convenient substitute, over the wound, removes the pain and danger at once. Spirits of hartshorn (volatile alkali, aqua ammoniæ alcoholiz.) applied to the part, and doses of the same administered internally (thirty or forty drops) twice, thrice, or oftener in a day, will also lessen the pain, and avert dangerous consequences. The mode of treatment first mentioned is the quickest and most certain. A popular remedy, in all places where the centiped is common, is the application to the wound of brandy or rum in which a centiped has been for some time preserved. This truly noxious insect grows to the size of six inches and more in length, and is a formidable inmate of most of the houses in tropical regions. Bishop Heber speaks of them as being very large and poisonous in different parts of India. So accustomed are the West India slaves and residents to their presence, and regardless of danger from their bite, that no particular means are taken to lessen their numbers, or to banish them effectually. It is very probable that they might be readily destroyed by placing poisoned food within their reach; yet, while resident in the West Indies, we never heard of any one being at the trouble of the experiment, though centipeds were almost daily killed about the house. They are frequently brought to America in cargoes of hides, &c.; and, a few years since, an individual, employed in unlading a vessel at Boston, lost his life in consequence of being bitten by one of these insects, brought over in this way. Species having considerable resemblance to the centiped of the West Indies, and much dreaded on account of their bite, are often seen about extensive collections of timber and lumber at the saw-mills on the head waters of the Susquehanna, &c. A smaller, dark, reddish-brown species, known by the name of *thousand legs*, is common in most parts of America, living under dead bark, or among decaying timbers. The order *myriapoda*, to which these insects pertain, from their crustaceous covering, the formation of the mouth, &c., appears to form the transition from the crustaceous or crab-like animals to insects proper. They are the *only* insects which, in their perfect state, have *more* than *six* feet, and have the abdomen *not* distinct from the trunk. They live and grow much longer than other insects, surviving through several generations. When first hatched, they have but six feet, or, at least, fewer than they afterwards acquire. The additional feet, as well as the rings to which they are attached, become developed as they advance in age—a sort of change peculiar to this race.

CENTLIVRE, Susanna, a dramatic writer, was born in Ireland, in 1667. Her mind having early taken a romantic turn, on being unkindly treated by those who had the care of her after the death of her mother, she formed the resolution of going to London. Travelling by herself on foot, she was met by Mr Hammond, father of the author of the love elegies, then a student at the university of Cambridge, who persuaded her to assume the habit of a boy, in which disguise she lived with him some months at college. At length, fearing a discovery, he induced her to proceed to the metropolis, where, being yet only in her sixteenth year, she married a nephew of Sir Stephen Fox. Becoming a widow within a year, she took for a second husband an officer of the army, of the name of Carrol, who was killed in a duel the second year of their wedlock. This event in her singular career reduced her to considerable distress, and led her to attempt dramatic composition. Her first production was a tragedy, entitled the Perjured Husband, which was performed in 1700. This was followed by several comedies, chiefly translations from the French, which exhibited the vivacity that distinguishes her literary character, and met with some temporary success. She also tried the stage as an actress on the provincial boards, and by that means attracted the attention of her third and last husband, Mr Centlivre, yeoman of the mouth to queen Anne, whom she married in 1706. She still continued writing for the stage, and produced several more comedies. Some of these remain stock pieces, of which number are the Busy Body, the Wonder, and a Bold Stroke for a Wife. They are diverting from the bustle of the incident, and the liveliness of the characters, but want the accompaniments of adequate language and forcible delineation. They partook of the license of the age. Mrs Centlivre enjoyed the friendship of Steele, Farquhar, Rowe, and other wits of the day. Having, however, offended Pope, she obtained a place in the Dunciad, but is introduced by no means characteristically. She was handsome in person, and her conversation was sprightly and agreeable; her disposition also appears to have been friendly and benevolent. She died in 1723. Besides her dramatic works, published in 3 vols., 12mo, 1763, a volume of her poems and letters were collected and published by Boyer.

CENTO (*Latin*); originally, a cloak made of patches (hence, as Lessing observes, the dress of Harlequin is called, in Apuleius, *mimi centuculus*). The term has been transferred to such poems as have been formed out of verses taken from other poems. It was a particular art to combine passages of different authors, on different subjects, in this manner, so as to form a regular whole. Thus there were, in early times, Virgilian centos (*centones Virgiliani*), in which most of the verses were taken from Virgil; for instance, the epithalamium of Ausonius; and centos from the verses of Homer (*Homerocentones*).

CENTRAL AMERICA. The republic of Central America comprises the old kingdom of Guatimala. It is bounded north by Mexico and the bay of Honduras, east by the Caribbean sea and the province of Veragua (belonging to Colombia), and southwest by the Pacific ocean. It extends from 8° 46′ to 17° 51′ north latitude. The population of Guatimala was stated by Humboldt, in 1808, at about 1,300,000; by Malte-Brun, in 1820, at 1,200,000; by the patriots, at 1,800,000. The rivers are numerous, but small. The largest are the Chiapa and St Juan. The principal lakes are those of Nicaragua and Leon. The whole country is mountainous, but the particular ridges are but little known. On the western shore, the country is subject to the most tremendous convulsions of nature, which have involved, at times, whole cities in ruins, and exterminated complete tribes of people. No less than twenty volcanoes are known to exist, which are in constant activity; some of them terrific. The soil is described as exceedingly fertile, and better cultivated than most parts of Spanish America; and, according to Humboldt, this country, when he saw it, was the most populous of the Spanish provinces. It produces, abundantly, grain, cochineal, honey, wax, cotton, sugar-cane, indigo, pimento, and chocolate. Cattle and sheep are abundant. The bay of Honduras is celebrated for its trade in logwood. The temperature in some parts is exceedingly hot and moist. The rains last from April to September, and violent storms are frequent. The climate is more healthy on the western coast than on the eastern. It is now divided into the states of Guatimala, Salvador, Honduras, Nicaragua, and Costa Rica, corresponding to the provinces of which it consisted before the revolution, in which it declared itself independent of Spain, in September, 1821.

This region was peopled originally by a party of the Toltecas Indians, from Mexico, as sufficiently appears from their language, and other indications of their origin; and tradition preserves the name of Nimaquiche, who led the colony from Tula to their new abode. At the time of the conquest of Mexico by Cortez, a descendant of Nimaquiche, called *Tecum Umam*, reigned in Utatlan, the principal seat of the Quiches, or primitive inhabitants of the country. They were subdued by Pedro de Alvarado, acting under a commission from Cortez. He set out from Mexico on this expedition in 1523, with an army of 300 Spaniards, commanded by Pedro de Portocarrero and Hernando de Chaves, with a large body of auxiliary Indians from Mexico, Cholula, and Tlascala. Many desperate and sanguinary battles were fought before the invaders could effect the subjugation of the country. Most of these conflicts occurred in the districts of Suclültepeque and Quezaltenango, where numerous traditions and local memorials of these events still remain among the aborigines. Six desperate battles took place near the river Zamala, which thus acquired, in the vicinity of the fields of carnage, the name of *Xiquigel*, or *River of Blood*. A long course of warfare ensued before Alvarado could break the spirit of the Quiches. After the death of their king, Tecum Umam, who fell in battle at the head of his subjects, they had recourse to a stratagem as bold as it was grand in conception. Their chief city, Utatlan, abounded in palaces and other sumptuous edifices, being hardly surpassed in splendour by Mexico and Cusco. It was encompassed by a lofty wall, and was capable of being entered only at two points; on one side by a causeway, and on the other by a flight of steps. Within, the buildings stood high and compact. In the hope of exterminating their enemies, the Quiches invited the Spaniards into their capital, pretending a willingness to submit. After their entrance, the Quiches set fire to the city, and, if the Indians of another tribe had not been false to their countrymen, and betrayed the secret, Alvarado and his followers would have perished. Having escaped this danger, the Spaniards pursued their victorious course until all opposition was crushed, and, in 1524, laid the foundations of the city of Guatimala. After the subjugation of the Quiches, the remaining tribes were subdued with comparative facility, and the dominion of the conquerors was permanently established.

The government of this country, as constituted by Spain, was subject to the Mexican; but the dependence was far from being close. It was denominated the *kingdom of Guatimala*, and governed by a captain-general. Owing to the secluded position of the people, and their peculiar occupations and spirit, they were almost the last among the Spanish colonies on the continent to embrace the cause of independence. While an obstinate struggle was going on around them, they remained for a long time in perfect tranquillity. At length, in September, 1821, they declared their independence of Spain; and although, for a time, Iturbide obtained the control of a large part of the country, yet, on his downfall, they recurred to their original purpose of forming a separate republic. A constituent congress was convoked, which completed the organization of the general government, Nov. 22, 1824, by the adoption of a federal constitution analogous to that of the United States. Under the constitution, Manuel Jose Arce was elected first president of the republic. Various differences, however, of a political nature, prevented his administration from being a tranquil or happy one. Violent factions plunged the country into a civil war, which continued from the beginning of 1827 till 1829. It was commenced by the inhabitants of the state of Salvador, who, on account of some jealousy of the people of Guatimala, proceeded from one degree of opposition to another, until they actually levied troops, and marched into the territory of the Guatimaltecans. They were beaten by the troops of the general government under the command of Arce, and driven back into Salvador; but still the war was protracted with various success. Besides this, disturbances of a serious character existed in others of the states; all tending to show that the people are far from being well fitted for the delicate task of self-government. The government consists of a president, a senate, and a chamber of representatives. The Catholic is the established religion. No other is tolerated. Slavery is abolished. The commercial regulations are on a much more liberal footing than in the other new republics. Foreigners have the same rights with the natives. Englishmen and adventurers from the United States wander over this rich republic, and carry on a lucrative commerce with the natives, the treasures which the country offers in gold and silver being in the hands of the labouring class.

The flag of the United Provinces of Central America consists of three stripes of different colours, with three volcanoes (signifying the three principal provinces—Guatimala, Nicaragua, and Comayagua), under a rainbow, with the inscription, "God, concord, liberty." The principal town, Guatimala, and the province of the same name, are so called from the Indian word *guanhtemali* (rotten wood), the Indian term for Campeachy wood. Cortez founded the towns of Guatimala and San Salvador. No colony cost Spain less blood than the vice-kingdom of Guatimala. The soil is volcanic, and luxuriantly fertile A large quantity of indigo is annually exported. The lake of Nicaragua, 121 miles in length and 41 in breadth, may become highly important in a com-

mercial respect, as the navigable river S. Juan unites it to the Atlantic ocean, and a canal has been proposed for connecting the Atlantic and Pacific oceans, to receive its water from this lake. There are several volcanoes on its shores. The aboriginal population of the country has very much decreased. The ruins of Huehuetlapallan (q. v.) are remarkable. The converted Indians are called *Ladinos;* the others, *Barbaros*, or *Bravos*. Two pieces of land (Tagurgalpa and Tolagalpa), belonging to the United Provinces, have never been subjected by the European settlers, or their descendants, and are inhabited by the independent Moscos, or Mosquitos, and other tribes. That part of the coast called the *Mosquito coast*, and extending to cape Gracias-a-Dios, the congress at Colombia, in 1824, declared to belong to the territory of Colombia. A part of that coast called *Poyais* (q. v.), containing a town of the same name, was erected into a separate state by the Scotch adventurer, Mac Gregor.

Central America contains antiquities of a very interesting nature, which have been but imperfectly examined and described hitherto, and which indicate that the aboriginal inhabitants of the country had even attained a very respectable proficiency in the knowledge of the arts of life. Near the village of Palenque are the ruins of what was once a city of several leagues in circumference. Remains of temples, altars, and ornamental stones, statues of deities, and other works of sculpture, are permanent proofs of its former importance. Like remains are found near Ocosingo, in the same part of Central America. A circus, and several stone pyramids, in the valley of Copan, in Honduras, are better known than the ruins of Palenque and Ocosingo. Vestiges of the city of Utatlan, before mentioned, of Patinamit and Mixco, and of many fortresses and castles in the province of Quezaltenango, are mentioned by Juarros and other authors.

This country has attracted attention incidentally of late, owing to its geographical position, and the hope entertained by many of seeing a canal cut across the isthmus in some part of Central America, so as to unite the Pacific and Atlantic oceans by a navigable channel. It has been well described by a native, Domingo Juarros, whose account has been translated into English by Mr Baily—Statistical and Commercial History of Guatimala. See also don Francia de Fuente's *History of Guatimala, before and after the Spanish Conquest.*

CENTRAL FIRE. Many natural philosophers have supposed a perpetual fire to exist in the centre of the earth, which they call *central fire*. In ancient times, volcanoes and other similar phenomena were explained by it. At a later period, when it was understood that such a fire in the interior of the earth was impossible, the phrase was used to express the interior warmth of the earth. To this central warmth Mairan ascribes a great part of the warmth on the surface of the earth. To a certain depth, there appears to be a fixed temperature in the interior of the earth, which probably arises from the penetrating heat of the sun. At least experiments show that in hot climates the interior of the earth is warmer than in cold ones. In Siberia, for instance, some workmen, having penetrated eighty feet in digging a well, found the earth frozen even at that depth. Interesting information on this subject may be found in Biot's *Astronomie Physique* (2d ed., Paris, 1810), in the 2d vol. 15th chap. *De la Temperature de la Terre.*

CENTRAL FORCES. When a stone is made to revolve round the hand in a sling, it has a continual tendency to fly off in a straight line, which is counteracted by the string which draws the stone to the hand. The string acts as a centripetal force, by constantly drawing the revolving body to the centre of motion; but the moment that the string is let go, or breaks, the stone will fly off in a right line, in consequence of its centrifugal force. When both forces are spoken of together, they are called central forces. The centripetal force of a body revolving round a fixed centre, may either be the cohesion of the particles of which that body is composed, as is the case in a grindstone revolving on its axis; or it may be the influence of some attracting power, as gravity, in the case of the planets. So long as the revolving body retains its curvilinear path, the central forces counteract each other, and are therefore equal; so that, when the value of the one is found, that of the other is also determined. The central forces are as the radii of the circles in which the bodies move, directly or inversely, as the squares of the times of revolution; and the squares of the times are as the cubes of the distances of the bodies from the centre of motion. By these laws we may determine the relative intensities of central forces; and as to the actual measure of these forces, it may be shown, that the actual velocity of a body moving in a circle is the same as it would acquire by falling through a distance equal to one-fourth of the diameter, by the constant action of the centripetal force. In consequence of the action of these laws, there is a limit to the magnitude and velocity of revolving bodies. Thus, if the fly-wheel of a steam engine, the weight of whose rim is one ton, revolve at the rate of fifty-three revolutions in a minute, it will, by reason of the predominance of the centrifugal force over the cohesion of the cast metal, burst asunder; and the same laws put a limit to the height of edifices erected upon the surface of the earth; for the velocity of the top of a tower carried to a certain height would be so great, that the strength of the hardest stone, or most tenacious cement, would be overcome. With regard to the heavenly bodies, it is supposed that the Creator impressed them originally with a power to move on eternally, in one direction, by their inertia; but, by the action of gravity, the line of this direction is continually changing, the planets being all attracted to the centre of the system. See *Circular Motion.*

CENTRAL MOTION. See *Circular Motion.*

CENTRE, LE (*French;* signifying *the centre*). In the French chamber of deputies, the seats are ranged in a semicircle in front of the president, and leave only a narrow passage in the centre. The ministers themselves do not sit, as in England, among the deputies, but in the front seat, on the left side of the centre. In England, the ministry is the centre of the majority, and all who do not vote with it, however different their views, unite in the opposition. In France, the two chief parties, one of which is attached to the old, the other to the new system of things, are opposed to each other independently of the ministers, and thus enable the ministry to maintain itself, as has been the case till very lately, without belonging decidedly to either party. The ministry bestows many offices on the condition that the officers shall always vote with it. In the French chamber of deputies, the adherents of the ministry chiefly sit near their leaders, on the seats in the centre (*le centre*). Here are to be found, therefore, the prefects, state-attorneys, and other officers of the government, who, for the sake of office, support all the propositions of the ministers. But private opinion, and the circumstances by which it is influenced, often operate so powerfully, that parties even appear in the centre. It is itself divided into a right and left side.—In England, the members of the parliament also sit on different sides, according to their party.—In the United States of North America, the seats are decided by lot, in both houses, and thus the

members of all parties are distributed all over the house.

CENTRIFUGAL FORCE. See *Central Forces.*

CENTRIPETAL FORCE. See *Central Forces.*

CENTURIES OF MAGDEBURG. The first comprehensive work of the Protestants on the history of the Christian church was so called, because it was divided into centuries, each volume containing a hundred years, and was first written at Magdeburg. Matthias Flacius (q. v.) formed the plan of it in 1552, in order to prove the agreement of the Lutheran doctrine with that of the primitive Christians, and the difference between the latter and that of the Catholics. Joh. Wigand, Matth. Judex, Basilius Faber, Andreas Corvinus, and Thomas Holzhuter, were, after Flacius, the chief writers and editors. Some Lutheran princes and nobles patronized it, and many learned men assisted in the work, which was drawn, with great care and fidelity, from the original sources, compiled with sound judgment, and written in Latin. It was continued by the *centuriatores* (as the editors were called) only to 1300. It was published at Bale, from 1559 to 1574, in thirteen vols. fol., at great expense. A good modern edition, by Baumgarten and Semler, which reaches, however, only to the year 500, appeared at Nuremburg, from 1757 to 1765, in six vols. 4to. A good abridgment was prepared by Lucas Osiander (Tubingen, 1592—1604, 9 vols. 4to), of which the Tubingen edition, 1607 and 1608 (usually in four thick vols. 4to), comprehends also the period from the fourteenth to the sixteenth century. The Catholics finding themselves attacked in this alarming way, and confuted by matters of fact, Baronius (q. v.) wrote his Annals, in opposition to the *Centuriæ.*

CENTURY (Latin *centuria*); a division of 100 men. This kind of division was very common with the Romans, and was used, in general, to denote a particular body, although this might not contain exactly 100 men. Thus centuries, in the army, were the companies into which the Roman legions were divided. This name was also given to the divisions of the six classes of the people, introduced by Servius Tullius. The first class contained eighty, to which were added the eighteen centuries of the knights; the three following classes had each twenty centuries, the fifth thirty, and the sixth only one century. The people voted in the public elections by centuries. See *Census.*

CEPHALONIA, or CEFALONIA; the largest of the islands in the Ionian sea, west of the Morea, at the entrance of the golfo di Patrassa, or gulf of Lepanto, about forty miles in length, and from ten to twenty in breadth; lon. 20° 40′ to 21° 18′ E.; lat. 38° to 38° 28′ N.; square miles 340, with 63,200 inhabitants, who own 400 vessels of different kinds. The island has 203 towns and villages, three ports, and excellent anchoring places and bays. The climate is warm and delightful, the landscape is adorned with flowers during the whole year, and the trees yield two crops of fruit annually. A great part of the soil is devoted to the production of raisins, currants, wine, oil, citrons, melons, pomegranates, and cotton. The raisins are preferred to those of any other of the Grecian islands, and even to those of the Morea. About 2500 tons are produced annually. Between 25 and 30,000 casks of oil, and 50,000 of wine, 5 or 6,000,000 pounds of currants, and 100,000 pounds of cotton, are likewise obtained yearly. Silks, medicinal herbs, oranges, and lemons are also raised. The system of agriculture adopted by the great land owners requires that a large proportion of the grain and meat consumed in the island should be imported from the Morea. The island is subject to frequent earthquakes. Cephalonia belonged to the Venetians until 1797, when the French took possession of it. Since 1815, it has belonged to the republic of the united Ionian islands (q. v.).—(See Napier's *Statistical Account of the Island of Cefalonia*, London, 1824.)—The ancient name of the island was *Cephallenia*, from the mythological Cephalus, husband of Procris. It was tributary to Thebes, the Macedonians, and the Ætolians, till the Romans took it. In the time of Thucydides, it had four cities; Same, Prone, Cranii, and Pale. Strabo only knew of two.

CEPHALUS; the son of Creusa; according to some, the son of Deioneus, king of Phocis, and of Diomede. He was the husband of Procris. Shortly after his marriage, Aurora carried off the beautiful youth while he was hunting on mount Hymettus. He refused the love of the goddess, who induced him to put the virtue of his wife to a trial which it could not withstand. Procris, in return, tempted him likewise, and he yielded also. Learning their mutual weakness, they became reconciled. But Procris subsequently became jealous of her husband, and concealed herself in a wood to watch him. He mistook her, among the leaves, for a wild animal, and killed her. On this, he was banished from Greece by the court of Areopagus, or, as some relate, killed himself with the same dart which had destroyed Procris.

CERACCHI, JOSEPH, born at Rome, was an eminent statuary, when the revolution in his native city induced him to give up the practice of his art, and engage in politics. In 1799, he was among the warmest partisans of the new republic. On the re-establishment of the papal authority, he was obliged to leave Rome, and went to Paris, where he was employed in making a bust of the first consul. Nevertheless, he joined the young French artists whom he had known at Rome, and whose ardent republican opinions coincided with his own, in a conspiracy against Bonaparte, in whom he saw only the oppressor of his country. In October, 1800, he was arrested at the opera, with Arena, Damerville, and Topino Lebrun. Before the tribunal, he answered only in monosyllables to the questions put to him. He was sentenced to death, together with his accomplices, and ascended the scaffold, Feb. 1801, with great firmness. The death of this disciple, and almost rival, of Canova, was a great loss to sculpture.

CERBERUS; a three-headed dog, with snakes for hair, the offspring of Echidna by Typhon, the most terrible of the giants that attempted to storm heaven. At his bark, hell trembled, and, when he got loose from his hundred chains, even the Furies could not tame him. He watched the entrance of Tartarus, or the regions of the dead, and fawned on those who entered, but seized and devoured those who attempted to return. Hercules only subdued him. Thus says the Greek mythology. In the article *Cemetery*, the reader will find that it was customary, among the Egyptians, after a corpse had been solemnly buried, to bid farewell to the deceased three times, with a loud voice. To express the circumstance that the deceased had been honoured with the rites of burial and the lamentations of his friends, they represented, in the legend imprinted on the mummy, or engraved on the tomb, the figure of the horse of the Nile, which the Greeks mistook for a dog, and represented it with three heads, in order to express the three cries or farewells. The Egyptians called this hieroglyphic *oms*, and the Greeks *cerber*, from the Egyptian *ceriber*, a word that means *the cry of the tomb.* It is natural, therefore, to suppose the Egyptian *oms* the basis of the Greek *mythos* of Cerberus. See page 148 in *Lectures on Hieroglyphics and Egyptian Antiquities*, by the marquis Spineto, London, 1829, 8vo.

CEREALIA (from *Ceres*, the goddess of the fields and of fruits) signified the productions of agriculture, also the festivals of Ceres.

CEREMONIAL OF THE EUROPEAN POWERS. One of the many ridiculous usages and pompous nullities, of which such a number have arisen in Europe, is the subject of this article; which has given rise to much war and confusion, and thrown many obstacles in the way of peace. No independent state can actually have precedence of another; but, as the weaker seek the protection and friendship of the more powerful, there arises a priority of rank. This has occasioned the gradual establishment of dignities, rank, and acts of respect to states, their rulers, and representatives, by which means (in contradistinction to the internal etiquette of a state) an international ceremonial has been formed, to the observance of which far more consideration is often paid than to the fulfilment of the most sacred contracts. Louis XIV. carried this folly further, perhaps, than any one before or after him. To this international ceremonial belong,

1. Titles of rulers. Accident made the imperial and regal titles the highest, and thus conferred advantages apart from the power of the princes. After Charlemagne, the Roman emperors were considered as the sovereigns of Christendom, maintained the highest rank, and even asserted the dependence of the kings on themselves. For this reason, several kings, in the middle ages, to demonstrate their independence, likewise gave their crowns the title of *imperial*. England, for example, in all its public acts, is still styled the *imperial crown*. The kings of France received from the Turks and Africans the title *empereur de France*. In progress of time, the kings were less willing to concede to the imperial title, of itself, superiority to the royal.

2. Acknowledgment of the titles and rank of rulers. Formerly, the popes and emperor arrogated the right of granting these dignities; but the principle was afterwards established, that every people could grant to its rulers, at pleasure, a title, the recognition of which rests on the pleasure of other powers, and on treaties. Some titles were, therefore, never recognized, or not till after the lapse of considerable time. This was the case with the royal title of Prussia, the imperial title of Russia, the new titles of German princes, &c.

3. Marks of respect conformable to the rank and titles of sovereigns. To the *royal* prerogatives, so called (which, however, were conceded to various states which were neither kingdoms nor empires, such as Venice, the Netherlands, Switzerland, the electorates), pertained the right of sending ambassadors of the first class, &c. In connexion with this, there is a much contested point, viz., that of precedence or priority of rank, i. e. of the right of assuming the more honourable station on any occasion, either personally, at meetings of the princes themselves, or of their ambassadors, at formal assemblies, &c., or by writing, as in the form and signature of state papers. There is never a want of grounds for supporting a claim to precedence. As the councils, in the middle ages, afforded the most frequent occasion of such controversies, the popes often interfered. Of the several arrangements of the rank of the European powers, which emanated from the popes, the principal is the one promulgated in 1504, by Julius II., through his master of ceremonies, Paris de Crassis, in which the European nations followed in this order:—1. the Roman emperor (emperor of Germany); 2. the king of Rome; 3. the king of France; 4. the king of Spain; 5. of Arragon; 6. of Portugal; 7. of England; 8. of Sicily; 9. of Scotland; 10. of Hungary; 11. of Navarre; 12. of Cyprus; 13. of Bohemia; 14. of Poland; 15. of Denmark; 16. republic of Venice; 17. duke of Bretagne; 18. duke of Burgundy; 19. elector of Bavaria; 20. of Saxony; 21. of Brandenburg; 22. archduke of Austria; 23. duke of Savoy; 24. grand-duke of Florence; 25. duke of Milan; 26. duke of Bavaria; 27. of Lorraine. This order of rank was not, indeed, universally received; but it contained a fruitful germ of future quarrels; some states, which were benefited by the arrangement, insisting upon its adoption, and others, from opposite reasons, refusing to acknowledge it. To support their claims for precedence, the candidates sometimes relied on the length of time which had elapsed since their families became independent, or since the introduction of Christianity into their dominions; sometimes on the form of government, the number of crowns, the titles, achievements, extent of possessions, &c., pertaining to each. But no definite rules have been established, by which states are designated as being of the first, second, third, fourth, &c., rank. At the congress of Vienna, a discussion took place respecting the settling of the rank of the European powers, and its inseparable consequences; and the commission appointed for the purpose by the eight powers, who signed the peace of Paris, made in their scheme a division of the powers into three classes. But, as opinions were by no means unanimous on the subject, most of the plenipotentiaries voting for three classes, Portugal and Spain for two, and lord Castlereagh entirely rejecting the principle of classification, as the source of constant difficulties, the question respecting the rank of the powers was suffered to rest, and the ambassadors of the crowned heads were merely divided into three classes. (See *Ministers, Foreign.*) Rulers of equal dignity, when they make visits, concede to each other the precedence at home: in other cases, where the precedence is not settled, they or their ambassadors take turns, till a compromise is effected in some way.

Many states claim not a precedence, but merely an equality. But, if neither can be obtained, there are several means of avoiding the scandalous scenes that formerly so often occurred. The ruler either comes incognito, or sends an ambassador of different rank from his with whom he contests the precedence; or the rulers or their ambassadors do not appear on public occasions; or, if they do, it is with a reservation respecting their dignity. In treaties between two powers, two copies are made, and each is signed by only one party; or, if both sign, each party receives the copy in which it holds the place of honour. According to the above mentioned resolution respecting the relative rank of ambassadors, which forms the 17th affix to the final act of the congress of Vienna, the order to be observed by the ambassadors in signing public treaties between powers, in respect to which the rule of alternate precedence exists, shall be decided by lot. In Britain and France, far less ceremonial is observed, in the official style, than in Germany,* where forms and titles are carried to an absurd extent, and the ceremonial words, which extend even to the pronouns by which the princes are designated, it is not possible to translate. Emperors and kings mutually style each other *brother*, while they call princes of less degree *cousin*. The German

* The following is an instance of the degree of folly to which the love of titles has been carried in Germany. We do not say that it was often carried to this extent, but the instance is too good to be omitted. A certain man of the name of *Seeger*, in the 17th century, had his likeness taken, and, according to the fashion of the period, was represented standing under a crucifix. From his mouth proceeded the words *Domine Jesu Christe, amas me?* and from the mouth of the Saviour the following answer:—*Clarissime, nobilissime atque doctissime domine mag. Seeger, rector scholæ Wittenbergensis meritissime atque dignissime, omnino amo te!*

emperors formerly used the term *thou* in addressing other princes. The *we*, by which monarchs style themselves, is used either from an assumption of state, or from a feeling of modesty, on the supposition that *I* would sound despotical, while *we* seems to include the whole administration, &c.; but the first reason is the more probable.

CERES (with the Greeks, *Demeter*, or *Deo*.) She is particularly the goddess of the earth, or the productive and fruitful earth. She was distinguished, especially, as the inventress of agriculture (hence her attributes of blades and ears of corn), and also as the founder of civil society, who fixed the wandering savages to the soil, and thus softened their manners, gave them the rights of property, the protection of laws, (hence her name *Thesmophoros*), and with these a love of country. These ideas are suitably expressed in the works of art. She was the daughter of Saturn and Rhea, born near Enna, in Sicily, which refers to the fruitfulness of that island. By Jupiter, her brother, she was mother of Proserpine. When her daughter was afterwards carried off by Pluto, Ceres resolved to wander over the whole earth, in the human shape, in search of her. She lighted her torch at the fires of Ætna, and mounted her chariot, drawn by dragons. But her endeavours were fruitless. Hecate merely informed her that she had heard the cries of the ravished maid. She arrived, at last, at Eleusis, where the hospitable Celeus received her. When she departed from his house, she permitted him to consecrate to her, in that place, an altar and temple, gave to his son Triptolemus her chariot drawn by dragons, and taught him the cultivation of wheat, that he might spread it over the whole earth, and distribute among men the gifts of the goddess. At length, the all-seeing eyes of the god of day discovered to her the residence of her beloved daughter, and, filled with anger, she demanded of Jupiter her restoration from hell. Jupiter granted her petition on condition that Proserpine had eaten nothing in Pluto's realms. But she had, in fact, eaten part of a pomegranate. Ceres, therefore, obtained her request only so far as this, that her daughter was allowed to remain half the year in the upper world. After finding Proserpine, she revoked the curse which she had pronounced upon the earth, and restored to it life and fertility. Jasion, to whom was attributed the introduction of agriculture into Crete, was, by her, the father of Plutus, the god of riches. Jupiter, inflamed with jealousy, slew Jasion with a thunderbolt. All these circumstances refer to the invention and extending of agriculture. "Ceres has," says Hirt, "in the representations of her, the same lofty stature and the same matronly appearance as Juno; yet there is something milder in her aspect than in that of the queen of the gods; her eye is less widely opened, and softer, her forehead lower, and, instead of the high diadem, her hair is bound with a light wreath or a simple band." She has in her hand a torch, often a sickle, a horn of plenty, or a wreath. Her festivals in Rome were called the *Cerealian*; in Greece, *Thesmophorian* and *Eleusinian*. (See *Egyptian Mythology*.)—Concerning the planet of this name, see *Planets*.

CEREUS, NIGHT-BLOOMING. See *Cactus*.

CERIGO (anciently *Cythera*), an island in the Mediterranean, separated from the Morea by a narrow strait, and belonging to the Ionian republic of the Seven Islands; lon. 23° E.; lat. 36° 28′ N.; population, 8 or 10,000; sq. m. 95. It is dry and mountainous, and produces neither corn, wine, nor oil, sufficient for the inhabitants; yet some of the valleys are fertile: sheep, hares, quails, turtles, and falcons are abundant. It was anciently sacred to Venus.

CERIGO or KUPSULI (anciently *Cythera*), a town on the west coast of the island of Cerigo, defended by a castle, situated on a sharp rock, surrounded by the sea, with a small harbour; lon. 22° 54′ E.; lat. 36° 28′ N.; population 1,200. It is the see of a Greek bishop.

CERINTHUS. See *Gnostics* and *Millennium*.

CERIUM, a rare metal, was discovered in 1803, by M. M. Hisinger and Berzelius, in a Swedish mineral, known by the name of *cerite*. Dr Thomson has since found it, to the extent of 34 per cent., in a mineral from Greenland, called *allanite*. The properties of cerium are, in a great measure, unknown. It is a brittle, white metal, which resists the action of nitric, but is dissolved by nitro-muriatic acid.

CERQUOZZI, Michael Angelo; a Roman painter of the seventeenth century, who received the surname *delle battaglie* (battle painter), and at a later period, that of *delle bombocciate*, because, in imitation of Peter Laar, he painted ludicrous scenes taken from low life. In the palace Spada, at Rome, is a picture representing Masaniello among the Lazzaroni, painted by him. He was born at Rome, in 1602, and died in 1660.

CERTIORARI, in law; a writ, the purport of which is to remove convictions, orders or proceedings before magistrates, indictments, and records in civil actions *before* judgment, and, under special circumstances, *after* judgment, from inferior courts into the courts above, with a view that the party may have justice done to him, or that the superior court may see whether the justices or court below, before which the proceedings have taken place previously to the *certiorari* being obtained, have kept within the limits of their jurisdiction. This writ, from the moment of its delivery to the judges of the court below or magistrate, suspends their power, and any subsequent proceedings by them are void and *coram non judice*. Although the writ of *certiorari* removes the record from the inferior court into the court above, yet the court above does not take up the cause where the proceedings stopped, but begins *de novo*.

CERUSE, or white lead, is an oxyde of lead, saturated with carbonic acid, and is prepared as an article of commerce, by the action of acetic acid on the metal. Plates of lead, being exposed to the vapours arising from boiling vinegar, are oxydized by the action of the air and the affinity of the acid. To obtain it in large quantities, plates of lead, about three feet long, six inches broad, and one line thick, are rolled up in such a manner, that a space of half an inch or an inch is left between each roll. These rolls are fixed, perpendicularly, in earthen vessels, which, at the bottom, contain strong vinegar. The latter, however, must not touch the plates; and, to prevent this, some little bars are placed over it, in the form of a cross. The vessels are then covered with plates of lead, and, being placed horizontally in tan or horse-dung, are exposed to a gentle heat. The vinegar now rises in vapours, which settle on the surfaces of the lead plates, penetrate them, and dissolve a great portion of the metal. In the space of from three to six weeks, the vapours of the acetic acid become saturated with lead, and change the latter into a whitish substance, which, after some time, is scraped off the plates, unrolled for this purpose. The plates are then rolled up again, and the same process is repeated. Ceruse is extensively used in the manufacture of oil paints, and, for this purpose, it is reduced to a fine powder. The pounding and bruising, however, are extremely injurious to the health. The dust, if swallowed, causes a dangerous disease, called the *painter's colic*. Mr Ward, an Englishman, invented a machine to guard against its pernicious effects. Much of the ceruse which is sold in the shops is adulterated by a mixture of chalk.

CERUTTI, Giuseppe Antonio Joachimo; one of the last members of the order of the Jesuits, (previously to its dissolution in 1773), and one of their most eminent professors in the college at Lyons, was born at Turin, June 13th, 1738. His Apology for the Jesuits attracted much attention. He had already published two discourses upon the means of preventing duels, and on the reasons why modern republics have not reached the splendour of the ancient. The last received the prize of the academy of Dijon. The Apology for the Jesuits gained him the favour of the dauphin. He was at Paris when the revolution broke out, in 1789. His principles, and, perhaps, a desire of revenging the humiliations which he had experienced as a defender of the Jesuits, made him one of the most zealous supporters of the new order of things. He was intimately connected with Mirabeau, and laboured much for him. He also published several pamphlets, among which was a *Mémoire sur la Nécessité des Contributions patriotiques.* In 1791, he was a member of the legislative assembly. Some time after, he delivered, in the church of St Eustache, a funeral discourse upon Mirabeau. Exhausted by his zealous exertions, he died Feb. 2, 1792. The city of Paris called a street after his name.

CERVANTES SAAVEDRA, Miguel de, one of the great writers of modern times, was born probably at Alcala de Henares, in 1547. His parents removed from this place to Madrid, when he was about seven years old. Their limited means made it desirable that he should fix on some professional study; but he followed his irresistible inclination to poetry, which his master, Juan Lopez, encouraged. Elegies, ballads, sonnets, and a pastoral, *Filena*, were the first productions of his poetical genius. Poverty compelled him to quit his country, at the age of twenty-two, to seek maintenance elsewhere. He went to Italy, where he became page to the cardinal Guilio Aquaviva, in Rome. In 1570, he served under the papal commander, M.A. Colonna, in the war against the Turks and African corsairs, with distinguished courage. In the battle of Lepanto, he lost his left hand. After this, he joined the troops at Naples, in the service of the Spanish king. In 1575, returning to his country, he was taken by the corsair Arnaut Mami, and sold in Algiers as a slave. He remained in slavery for seven years. Servitude, far from subduing his mind, served to strengthen his faculties. Vincente de los Rios and M. F. Navarrete, his chief biographers, relate the bold but unsuccessful plans which he formed to obtain his freedom; but, as the only information we have of that period of his life is from his own novel (the Prisoner), of which we cannot positively say that it relates merely the facts of his imprisonment, we cannot determine, with great accuracy, his adventures in Barbary. In 1580, his friends and relations at length ransomed him. At the beginning of the following year, he arrived in Spain, and from this time lived in seclusion, entirely devoted to the muses. It was natural to expect something uncommon from a man, who, with inexhaustible invention, great richness of imagination, keen wit, and a happy humour, united a mature, penetrating, and clear intellect, and great knowledge of real life, and mankind in general. But it rarely happens, that expectation is so much surpassed as was the case with Cervantes. He began his new poetical career with the pastoral novel, *Galatea* (1584), in which he celebrates his mistress. Soon after the publication of this, he married. Being thus obliged to look out for more lucrative labour, he employed his poetical genius for the stage; and, in the course of ten years furnished about thirty dramas, amongst which his tragedy called *Numancia* is particularly valued. He was not so successful in another kind of drama, particularly favoured by the Spaniards, a tangled mixture of intrigues and adventures; and this was, doubtless, the cause why he was supplanted by Lope de Vega, who was particularly qualified for this kind of composition. He, consequently, gave up the theatre, but, it seems, not without regret. From 1594 to 1599, he lived retired at Seville, where he held a little office. He did not appear again as an author till after the lapse of ten years, when he produced a work which has immortalized his name—*Don Quixote*. Cervantes had in view, by this work, to reform the taste and opinions of his countrymen. He wished to ridicule that adventurous heroism, with all its evil consequences, the source of which was the innumerable novels on knight-errantry. The beginning of the work was, at first, coldly received, but soon met with the greatest applause, in which, at a later period, the whole of Europe joined. Cervantes' true poetical genius was nowhere so powerfully displayed as in his Don Quixote, which, notwithstanding its prosaic purpose and its satirical aim, is full of genuine poetry. While it struggles against the prevailing false romance of the time, it displays the most truly romantic spirit. The extraordinary good fortune of the work did not extend to the author. All his attempts to better his condition were unsuccessful, and he lived retired, with his genius and his poverty, and a modest though proud estimation of his merits. After an interval of some years, he again appeared before the public, in 1613, with Twelve Novels (which may be placed by the side of Boccaccio's), and his Journey to Parnassus—an attempt to improve the taste of his nation. In 1615, he published eight new dramas, with intermezzos, which, however, were indifferently received. Envy and ill-will, in the mean time, assailed him, and endeavoured to deprive the neglected author of his literary fame; for which the delay of the continuation of Don Quixote afforded the pretext. An unknown writer published, under the name of Alonzo Fernandez de Avellaneda, a continuation of this work, full of abuse against Cervantes. He felt the malice of the act painfully, but revenged himself in a noble manner, by producing the continuation of his Don Quixote (1615), the last of his works which appeared during his lifetime; for his novel *Persiles and Sigismunda* was published after his death. He found a faithful friend in the count of Lenos, and was thus saved from the death of Butler; but poverty, his constant companion through life, remained true to him till his last moments. He died at the age of sixty-eight, April 23, 1616, in Madrid, where he had resided during the last years of his life. He was buried without any ceremony, and not even a common tombstone marks the spot where he rests. In addition to his celebrity as an author, he left the reputation of a man of a firm and noble character, clear-sighted to his own faults and those of others Many of his works are translated; Don Quixote into all the languages of Europe.

CESAR. See *Cæsar*.

CESAROTTI, Melchior; one of the most celebrated of the Italian literati of the eighteenth century; born at Padua, in 1730, of a noble family. He devoted himself to the belles-lettres, and was soon chosen professor of rhetoric in the seminary in which he was educated. He translated three tragedies of Voltaire—*Sémiramis*, *La Mort de César*, and *Mahomet*. In 1762, he went to Venice, where he translated Ossian into Italian, and was, in 1768, appointed professor of the Greek and Hebrew languages in the university of Padua. Here he published his translation of Demosthenes and of Homer, and his course of Greek literature. After the establishment of the republican government, in 1797, he was appointed

by the existing authorities, to write an Essay on Studies. In this, he made suggestions for the improvement of education. In 1807 appeared his poem called *Pronea* (Providence), in praise of his benefactor, Napoleon. In spite of his advanced age, he subsequently occupied himself with an edition of all his works, which he had commenced in 1800; but his death, in 1808, prevented the completion of this enterprise. Cesarotti was a man of great talents and genius. His prose is animated and powerful, but he indulges too much in innovations, particularly Gallicisms; and cannot, therefore, compete with such writers as Machiavelli, Galileo, &c. The translation of Ossian is considered his best poetical production, and Alfieri praises its beautiful versification. A complete edition of Cesarotti's works was published by his friend and successor, Giuseppe Barbieri (Pisa, 1805 et seq., thirty vols.).

CESTUS (Gr. κεστος); a girdle worn by Venus, endowed with the power of exciting love towards the wearer. The following is Pope's translation of Homer's description of it:—

> In it was every art and every charm
> To win the wisest, and the coldest warm—
> Fond love, the gentle vow, the gay desire,
> The kind deceit, the still-reviving fire,
> Persuasive speech, and more persuasive sighs,
> Silence that spoke, and eloquence of eyes.

Forcellini says, *Fingunt poetæ, intextas habere cupiditates, voluptates, delicias, illecebras, suspiria, desideria, risus, jocos, blanda verba, gaudia. jurgia, et hujusmodi, quibus amatorum vita constat.* This beautiful fiction has been happily imitated by Tasso, in his description of the girdle of Armida.

CETO. See *Phorcus*.

CETTE (lat. 43° 24′ N.; lon. 3° 47′ E.); a town with 7000 inhabitants, in what was formerly *Languedoc*, now in the department of the Herault, upon a peninsula, between the Mediterranean and lake Thau, into which the great canal of Languedoc enters. The port, which is safe, and has been very much deepened, is guarded by the fort St Pierre and St Louis. Cette is the principal place of export for the productions of Languedoc. Its commerce in woollen, cotton, and silk goods, leather, wine, salt, oil, verdigris, soda, pilchards, tobacco, soap, &c., is considerable. It has, likewise, some sugar refineries and silk manufactories, and a school for navigation. In the neighbouring lagoons, 500,000 cwt. salt are made annually.

CEUTA (anciently *Septa*); a city on the African coast of the Mediterranean, in the kingdom of Fez, upon a peninsula opposite Gibraltar, with 7400 inhabitants. It is the seat of a bishop. It has a strong fort. The harbour is bad. The Portuguese possessed themselves of this city in 1415. With Portugal, it was included, in 1570, in the Spanish monarchy, by Philip II., and remained under the Spanish government after the revolution of 1640. In the peace of 1668, Portugal ceded it to Spain. Ceuta is one of those Spanish *presidios*, which are used only for commerce, and as places of transportation for exiles or criminals. Lat. 35° 48′ N.; lon. 5° 11′ W.

CEVA, Thomas, born at Milan, in 1648. Lessing says, that this Italian Jesuit, who died in 1737, was as great a mathematician as poet; and truly a poet, not merely a rhymer, as appears from his Latin poem, the *Puer Jesus*, which he considered as a comic epopee, rather than as a true epic poem. He published several excellent mathematical works; for instance, one on the division of angles, and *Opuscula Mathematica* (Milan, 1699). He also wrote several biographies; as that of the Italian poet Lemene, with judicious remarks upon poetry..

CEVENNES, or SEVENNES; a chain of mountains in the south of France, considered by some a branch of the Alps; by others, of the Pyrenees. They are connected with both, and extend also to Auvergne. In the highest regions of these mountains, hardly any vegetation is to be perceived. The highest summits are the Puy de Dome, 4960 feet high; the Cantal, 5964 feet, and two other elevations, above 6000 feet high. The lower range, which is called the *Garigues*, produces almost nothing. The central mountains are more fertile, and are intersected by pleasant valleys. The chestnut woods, the cultivation of silk, and various sorts of fruit, employ and support a large population. The highest part of the mountains serves principally for pasturing sheep. Several kinds of metals are found here. These mountains have been distinguished as the theatre of a bloody civil war.

Ever since the thirteenth century, religious sects had been springing up in the Cevennes, which, irritated by the abuses of the Roman clergy, laboured to restore the Christian religion to its primitive purity. Traces of them at a very early period are found in this southern extremity of France, under the name of the *Poor men of Lyons*, the *Albigenses*, and the *Waldenses*. The crusades directed against them by the popes and the inquisitorial tribunals had, their enemies imagined, the effect of annihilating them; but great multitudes, in fact, still survived; and, when the Protestant religion extended itself in Switzerland, and particularly in Geneva, it would naturally find adherents, in this part of France, whom all the persecutions, down to the time of Henry IV., were insufficient to extirpate. From that time they were protected by the edict of Nantes. But, when Louis XIV. formed the insane resolution of repealing this act, in 1685, and bringing all his subjects, by force or persuasion, within the pale of the Catholic church, the quiet of the poor but happy people of the Cevennes was broken in upon, and a series of persecutions commenced, hardly distinguishable from those which the early Christians experienced from the Roman government, except that now the persecutors themselves were Christians. The peace of Ryswick, in 1697, afforded Louis XIV. leisure to pursue, in earnest, this work of extermination. Dragoons were sent out to second the preaching of the monks, and the tax-gatherers were instructed to exact a rigorous payment of taxes from all who were suspected of Protestantism. Children were torn from their parents to be educated in the Catholic faith, men who frequented houses of prayer were sent to the galleys, women were thrown into prison, and preachers were hanged. These measures, reducing the people to despair, brought on combined resistance and a violent war. Prophets arose, and prophetesses, who foretold the victory of the country people. Whoever fell into the hands of the dragoons was massacred, and every officer or soldier of Louis, who was taken prisoner suffered the same fate. The peasants attacked their tormentors, the tax-collectors, in the night, with no other dress than a shirt, to escape detection. (See *Camisards*). The murder of the abbot Chaila, in 1703, who commanded the *dragonades*, as the attempts to produce conversion by the aid of dragoons were called, was the signal, it appears, for a most desperate contest. The forces of Louis were incapable of bringing it to a conclusion, as the crags of the mountains offered numerous places of refuge to the Protestants, and his troops were every moment in danger of being cut off, or of perishing by hunger and cold. The enthusiasts grew more fearless every day. Several leaders arose among them, and Cavalier, at the age of twenty years (with whom Voltaire became personally acquainted), highly distinguished himself. Louis XIV. was now placed in a very critical situation, because the war of the Span-

ish succession made it necessary for him to extend his forces on every side, for the protection of France; and the duke of Marlborough, and the duke of Savoy, by promises, and by some small assistance, augmented the flame which was kindled in the south of France. In the diocese of Nimes, the fanatics determined to recompense evil with evil, murdered 84 priests, and burned 200 churches; but, in the mean time, more than 40,000 of their number were broken upon the wheel, burned at the stake, or thrown into prison. At length, in 1704, after marshal Montrevel had exerted all his ability to no purpose, Louis recalled his best general, marshal Villars, from the army of the Rhine, to give a new direction to the perilous state of affairs in the south of France. One of the leaders of the rebels had conceived the project of effecting a union with the duke of Savoy in Dauphiny. The whole country, from the sea-shore to the highest mountain-ridge, was more or less in their hands, and with the inhabitants of Nimes, Montpellier, Oranges, Uzes, &c., agreements were made, which secured them arms, bread, and other necessaries. They melted down a vast number of bells to make cannon, and Cavalier acted like an able general. The Catholic peasantry no longer dared to cultivate their fields, or to carry provisions into the cities. Such was the state of things when Villars arrived at Beaucaire, April 20, 1704, and at Nimes the 21st. He began with instituting the necessary inquiries in regard to the cause of the rebellion, the character of the people, and their mode of thinking. Then he proclaimed a general amnesty for all who would lay down their arms, and forthwith liberated every prisoner who promised to return to his allegiance. By this mode of proceeding, he induced several bodies of the insurgents to lay down their arms; while, on the other hand, he threatened the obstinate with the severest punishment; and, to enforce his menaces, troops were sent out in every direction from a given point, where a body of forces was stationed to afford them assistance, and, if necessary, to meet the combined forces of the insurgents in the field. Every prisoner, taken in arms, was directly put to death, or hanged and broken on the wheel, in Alais, Nimes, or St Hippolyte. Such was the success of Villars, that, on May 10, Cavalier regarded the cause of the Camisards as desperate, and made proposals for a treaty, which was concluded on condition that he should surrender himself with his followers, but be permitted to leave the country with them. Villars had a personal interview with him in Nimes: the whole troop consisted of 1600 men, and, not far from Nimes, they were entertained by Villars with the greatest hospitality. The memoirs of Villars say their number was 1600: Voltaire speaks only of 800. On the 22d, the treaty was confirmed in Paris, and, at the same time, Cavalier was made colonel, with a pension of 1200 livres, and permission to appoint the officers of the regiment which he was to raise. It was the design of Louis, probably by the advice of Villars, in this way to prevent a company of brave soldiers from leaving the country, at the same time that he guarded against injury from them. Villars now gave orders that every gibbet and every scaffold should be torn down; but, just as he seemed to have completed his task, things took another turn. Cavalier had gone to Anglade, a neighbouring place, to organize his regiment, when the peasants, instigated by his lieutenant, and animated by their prophets, became again disorderly, and, without listening to Cavalier, who had hurried back, plunged into the adjacent forests. They would not hearken to his persuasions, nor to the commands of Villars, and obstinately declared that the king must restore the edict of Nantes; otherwise they had no security. At length, however, Villars succeeded, by his personal influence, and by cutting off their provisions, in bringing them to submission. They all entered the service of Piedmont, and marched under Cavalier to Catalonia, where the whole regiment was destroyed in the battle of Almanza, in which Cavalier himself was severely wounded. Meanwhile, the civil war in France did not end with their departure. There were still factions, of which the one headed by a certain Roland was the most distinguished. But Villars, who confided more in kindness and management than in his strength, sought to gain possession of their chiefs only by the former qualities. He succeeded, indeed, in capturing Roland, who was in love with a girl of the country, and the musket of a dragoon spared him the tortures of a public execution. Others surrendered themselves, trusting to the marshal's word, and the *billets de sureté en blanche* which he gave them, securing them and their friends from persecution, whether political or religious. Thus, by the end of December, Villars had happily accomplished his difficult enterprise, and there were only a few remnants of the party, wandering in the highest regions of the mountains. But, the next year, marshal Berwick, after their audacious project to seize him at Nimes had miscarried, totally suppressed them. Two hundred were executed, and many fled to foreign lands. From that time a war of opinions has prevailed, to a greater or less degree, in the south of France, and, lately, since the restoration, has led to dreadful outrages in Nimes and other places. See *Huguenots* and *France*.

CEYLON (*Seilan*); an island in the Indian ocean, containing 19,469 square miles. It is separated from the south-eastern extremity of the Coromandel coast by the shallow strait of Manaar, but united to it by Adam's bridge—a remarkable chain of sand-banks. Ceylon lies between the parallels of 5° 50′ and 9° 50′ N. lat., and between 79° 20′ and 81° 50′ E. lon. For the first certain information relating to this island, which is considered as the cradle of the religion of Buddha, we are indebted to the Portuguese Almeyda, who, in 1505, entered a port of Ceylon by accident, and was hospitably received by the natives. The Portuguese were induced to establish commercial settlements in the island, on account of the great quantity of cinnamon which it produced; but their cruelty, their avarice, and their fanaticism, which they evinced in suppressing the religion of the natives, and endeavouring to convert them to Christianity by violence, made them so much abhorred, that the Cingalese, in 1603, assisted the Dutch in driving them out of the island. By the conquest of the principal Portuguese town, Colombo, the Dutch succeeded, in 1656, in expelling the Portuguese. But the gratitude of the natives, at their imagined deliverance, which had induced them to cede the most valuable districts to the Dutch, was soon changed into hatred. Bloody wars ensued, in which the Europeans were the victors, and forced their opponents to seek refuge in the interior of the island, where they remained independent. After Holland had been erected into the Batavian republic by the French, in 1795, the English took possession of this island, and at the peace of Amiens, in 1802, it was formally ceded to them. In 1815 they subjected the whole of it by the capture of the Cingalese king of Candy, and the conquest of his principal town. The island is subject immediately to the crown. The capital is Colombo. Its coasts are flat and covered with rice-fields, interspersed with forests of cocoa-trees. The interior of the country is traversed by a chain of steep mountains, covered with wood, which divides the island into two almost equal parts, and the highest point of which is the famous Adam's peak (q. v.), or

Hamaleel, 6680 feet high, on which the Cingalese and all the Hindoos worship the colossal footsteps of Adam, who, according to their belief, was created there, and, according to the religion of Buddha, is Buddha himself. The island seems to consist of primitive rock. It has many rivers, few of which, however, are navigable, as they are, for the most part, too shallow in the dry season, and too dangerous in the rainy season. The climate is, on the whole, mild and healthy. Although near the equator, the heat is more moderate than on the continent, on account of the seabreezes. The monsoons give variety to the climate. The difference between the longest and shortest day is not more than fifteen minutes. The island produces gold, silver, lead, tin, iron, quicksilver, and salt; besides these, about twenty different kinds of precious stones, among them the amethyst, rock crystal, topaz, garnet, ruby, sapphire, hyacinth, turquoise, &c., are brought down by the rivers, after heavy showers in the rainy season. The rich soil produces nearly every plant peculiar to India and the tropical countries. All the tropical fruits grow wild. Rice, tobacco, pepper, sugar, coffee, pisang, tamarinds, several species of palm, the palmyra-tree, ebony, talipot or talpat-trees, with enormous leaves, of which a single one would cover from fifteen to twenty people, hemp, dye-stuffs, &c., are found here. The chief production, the cinnamon-tree, is peculiar to the island. About 340,000 pounds of cinnamon are annually sent to England. The best and most prolific cinnamon-woods, generally called *cinnamon-gardens*, are situated on the coasts. The annual produce is about 400,000 pounds. The thick forests, which are but seldom visited by men, contain numerous wild beasts—herds of elephants (the hunting of which constitutes a favourite amusement of the Cingalese), ferocious wild boars, leopards, monkeys, jackals, &c. The island is also rich in tame animals, poultry, &c., and the shores abound in fish. The pearl fishery, on the western coast, in the bay of Condatchy, was formerly very prolific. The inhabitants, whose number Colquhoun estimates at 6,000 whites and 800,000 natives, but which, according to others, exceeds 2,000,000, are divided (exclusive of strangers settled there) into two principal nations, quite distinct from each other, namely, Weddas (10,000)—a rude people, living in the interior of the forests, without any social order, who neither attend to agriculture, nor the breeding of cattle, but depend on the produce of the chase for support—and the Cingalese, who have attained a certain degree of civilization, practise agriculture, work in iron and gold, weave cotton, and possess a written language. They are divided into certain castes, like the Hindoos, of which each has its separate laws, customs, and dress, and are of the religion of Buddha, which is distinguished for its mild spirit, and the purity of its doctrine. Besides these, there are Hindoos and Moors. The possession of the port of Trincomalee is of much consequence to the British, it being the safest of all the ports in the East Indies. Bishop Heber says of Ceylon, that the country "might be one of the happiest, as it is one of the loveliest, spots in the universe, if some of the old Dutch laws were done away, among which, in my judgment, the most obnoxious are the monopoly of cinnamon, and the compulsory labour of the peasants on the high roads, and other species of *corvées*." He mentions having heard that the number of Christians on the coast, and amongst the English settlements, does not fall short of half a million: very many of these, undoubtedly, are merely nominally such. The church missionary society has four stations on the island. For many other interesting facts, we must refer the reader to bishop Heber's *Narrative of a Journey through the Upper Provinces of India, from Calcutta to Bombay*, 1824—1825, *with Notes upon Ceylon*; London, 1828, 2 vols. 8vo.

CHABANON, a member of the French academy, was born at St Domingo, in 1730, and died at Paris, July 10, 1792. For his deficiency in genius, he made amends by diligence. He translated Pindar and Theocritus, in 1771 et seq. His best works belong to a species of criticism which is characterized by learning and taste, and affords much instruction and amusement, although never aspiring to a lofty elevation. Among these are his *Discours sur Pindare et la Poésie Lyrique* (1769), and *Observations sur la Musique* (1779 and 1785, 2 vols.; his best work). His tragedies, comedies, and academical *éloges* are sensible, neat, elegant, but cold.

CHABERT, Joseph Bernard, marquis of; a distinguished navigator, astronomer, and geographer. He was born at Toulon, Feb. 28, 1724, and entered the marine in 1741. In 1746, he sailed to Acadia (Nova Scotia), with a French squadron. This voyage made him sensible of the imperfection of all the charts of America, that had been attempted. Immediately on his return to Paris, he commenced the study of astronomy, and first introduced the naval officers of France to an acquaintance with a science of great importance to their honour, and often to their safety. In the war which continued till 1748, he obtained the cross of St Louis. After peace was concluded, he presented to the government a plan for a voyage of observation in the North American seas, which was executed in 1750. (See the result in his astronomical and hydrographical work, entitled, *Voyage sur les Côtes de l'Amérique Septentrionale*, 1754, 4to.) In 1758, he was chosen a member of the academy, and formed the project of a chart of the Mediterranean. He commenced this work in 1764. He was likewise made inspector-general of the naval depots. While he held this office, the celebrated Méchain spent several years, under his direction, in reducing and arranging a great number of observations, which had been made by Chabert, as the foundation for a new atlas of the coasts of the Mediterranean. The American war interrupted the work, and called the brave Chabert to his post, where he distinguished himself so highly, that, in 1781, he was made commander of a squadron. The revolution drove him to England, and he was received by doctor Maskelyne with great kindness. In 1800, he lost his sight, in consequence of his intense application to study, and, in 1802, returned to Paris, where Bonaparte assigned him a pension. In 1804, he was appointed a member of the board of longitude, and, in 1805, he presented to it a map of Greece, and a description of the coasts of that country. Notwithstanding his blindness, his powerful memory enabled him to make additions to the stores of scientific facts. Lalande praises his accuracy in observations, his patience, his diligence, and his courage in overcoming every obstacle, in the highest terms. He died Dec. 2, 1805, of a lung fever.

CHACABUCO, Battle of; celebrated in the history of modern Chili. In the beginning of 1817, the Spaniards were completely masters of Chili, having, in 1813, beaten Carrera, and compelled him and others, his compatriots, to cross the mountains for safety. But on the 12th of February, 1817, the troops of San Martin, commanded by O'Higgins, gained a decisive victory over the Spaniards under Maroto, at Chacabuco, which, with that of Maypu, fought afterwards, gave independence to the country. See *Chili*. Stevenson's *South America*, vol. iii. p. 131.

CHACTAWS. See *Choctaws*.

CHÆRONEA; a place in Bœotia, famous for the battle fought there, 338 B. C. between Philip of

Macedon and the confederated Greeks. See *Greece* and *Philip*.

CHAFALAYA; the western branch of the mouth of the Mississippi, which runs into St Bernard's bay.

CHAGAING, or CHAGONG; a town of Birmah, on the west bank of the Irrawaddy, opposite to Ava, partly at the foot, and partly on the side of a hill, sometimes the residence of the king; lon. 96° E.; lat. 21° 56′ N. It stands very high, being built on the slope of several hills, the tops of which are covered with numerous temples, most of them ornamented with spires and gilded roofs, forming a beautiful prospect. The houses are of timber, with tiled roofs. The town derives great riches from its quarries of beautiful white marble, and the manufacture of idols. These are chiefly statues of Boodh or Guadama, the deity of the country, sitting cross-legged on a pedestal. It is likewise a mart for cotton, exported to China.

CHAILLOT; a village which is situated behind the Tuilleries, and now included within the limits of Paris. It is ornamented with splendid country-seats and gardens, affording delightful prospects of the Seine and the surrounding country. On the extremity of the *quai Billy*, opposite to the celebrated bridge of Jena (now the bridge of the military school), is the unfinished palace of the king of Rome, commenced by Napoleon at an enormous expense. The ruins of this palace, on entering the city from the side of Versailles, afford a disagreeable prospect, and an unpleasant contrast with the beautiful architecture of the military school, immediately opposite to it. The parish church is the sepulchre of the brave count Josias Rantzau, marshal of France, who was buried here in 1650. The nuns of the order of *Sainte Marie de la visitation* had a celebrated convent here, where persecuted grandeur often sought an asylum. Here died, in 1669, the queen Henrietta of France, daughter of king Henry IV., wife of Charles I. king of England, and her niece, the princess Louisa, of the Bavarian palatinate, who with the other nuns, used to make hay in the neighbouring fields.

CHAIN, in surveying, is a measure consisting of a certain number of links of iron wire, serving to take the dimensions of fields, &c.

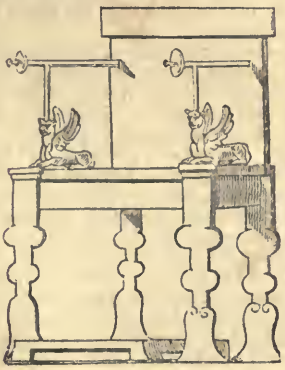
Chain. In nautical language, *chains* are strong links or plaits of iron, the lower ends of which are bolted through a ship's side to the timbers. They are on the outside, and are used to contain the blocks called *dead-eyes*, by which the shrouds of the masts are extended.—*Top chains* are those which preserve the lower yards from falling, when, in time of battle, the ropes are rendered incapable of service.

CHAIN-CABLE. See *Cable*.

CHAIN-TIMBER; a timber of large dimensions, placed in the middle of a building, to give it strength.

CHAIN-WALES. See *Channels*.

CHAIR, a movable seat. The curule chair of



the Romans was that in which the chief magistrates were seated. The cut given at the foot of the previous column, is from a drawing found in Pompeii, and the above stool, which closely resembles our modern camp stools, represents one found in Herculaneum.

CHAISE, PERE DE LA. See *Lachaise* and *Cemetery*.

CHALCEDON (at present, the village *Kademki*); under the Roman dominion, a flourishing city in Bithynia, on the northwest point of Asia Minor, opposite Constantinople, and not far from the present Scutari. At this place, in the autumn of 451, Marcian, the emperor of the East, held the fourth general council, for the purpose of destroying the ascendency of the Monophysite doctrines (see *Monophysites*,) obtained, in 449, by the influence of the Alexandrian patriarch Dioscuros, at the (so called) *robber-synod* at Ephesus; and to establish a creed of Christian faith, which, equally remote from the Nestorian and Monophysite doctrines, should satisfy all parties of orthodox Christians. The emperor's commissioners took the lead, and after them came the legates of the Roman bishop Leo I., who had endeavoured to establish articles of faith without the aid of a council, but deemed it judicious to maintain his influence there, and take revenge for the excommunication pronounced against him by Dioscuros. This council, which consisted of 600 bishops, mostly of the East, deposed Dioscuros, and, after violent debates, adopted into their articles of faith, at the instigation of the Roman legate, the tenor of a missive of Leo to Flavian, the former patriarch of Constantinople, directed against Eutyches, the founder of Monophysitism, besides the confessions of faith of the general councils of Nice and Constantinople; also two synodal missives of the former patriarch, Cyril of Alexandria, condemning the Nestorian tenets. The articles of faith settled by them declared the mother of Jesus the parent of God, and established, in opposition to the Monophysites, the belief of two natures in Christ, existing without mixture or change, without division or separation, so that, by the union of the two natures in one person and substance, their distinction is not destroyed, but the characteristics of each are retained. Besides this creed, the council promulgated thirty canons against the abuses of the clergy, of which canons the twenty-eighth conceded to the patriarch of Constantinople equal rights and privileges with the Roman, to whom it merely gave precedence of rank; and thus the matter remained, notwithstanding the remonstrances of the Roman legates. Bloody rebellions in Palestine and Egypt were the immediate consequences of the decrees of the council of Chalcedon against Dioscuros and the Monophysites; and not till after a long period of ecclesiastical contests, during which the Monophysites were entirely separated from the orthodox, and formed a distinct church, did the Chalcedon formula of faith obtain the authority which it now has in the Catholic, Greek, and many Protestant churches.

CHALCEDONY; a mineral including several varieties, which have received distinct names in the arts. It occurs in small veins, or in cavities of other minerals, and appears to have been formed by the filtration of silicious matter.

1. The common chalcedony has a cloudy or milky appearance when held between the eye and the light. It is semi-transparent, or only translucent in various degrees. Though sometimes nearly white, its more common colour is grey, more or less shaded with blue, yellow, brown, green, &c. The surface is often rough or uneven. Its fracture is usually even, though seldom smooth. It is usually contained in amygdaloid, porphyry, greenstone, or basalt, or in the cavities of these rocks. It sometimes traverses them in veins. Sometimes it occurs in metallic veins, also in granite and gneiss. Oberstein, in the palatinate of the Rhine, is one of the best localities. Fine specimens are found in the islands of Faroe. It is found, also, in Vicentino and Iceland, and in Trevascus mine, in Cornwall, in New South Shetland, in Nova Scotia, and in many parts of the United States. It receives a good polish, and is much used for ring-stones, seals, &c.

2. Another of the principal varieties is carnelian. The prevailing colour of this variety is red; sometimes it has a tinge of yellow or brown, or is nearly white. Its colours, or their different shades, sometimes appear in spots or stripes, or gradually pass into each other. It is commonly semi-transparent, sometimes only translucent. Its geological situation is similar to that of common chalcedony, which it often accompanies. The finest specimens, sometimes called *Oriental carnelian*, come from Cambay, Surat, &c. in India. It is obtained, also, from Arabia, Siberia, Sardinia, and Surinam. It is found on lake Superior near Portage river, in Missouri, at Herculaneum, &c., in Massachusetts at Deerfield. It receives a good polish, and is much employed for seals, bracelets, &c. The ancients often engraved on carnelian.

3. Sardonyx differs from carnelian in its colour only, which is reddish-yellow, or nearly orange, sometimes with a tinge of brown. It often appears blood-red by transmitted light. It is found in Massachusetts, at Deerfield, in greenstone.

CHALDÆA, in ancient geography; the southerly part of Babylonia, towards Arabia and the Persian gulf, lying west of the mouth of the Tigris and Euphrates, formerly a fertile country, now barren. The Chaldeans were a Semitic tribe, and one of the most famous nations of Asia. They were the first people who worked in metals, and were not destitute of astronomical knowledge. They founded the Babylonian and Assyrian empires. Their name remained with the priesthood of the Babylonians, whose members were employed in the worship of the gods, in expounding their scriptures, prophesying, the practice of medicine, interpreting dreams, also in conjurations, magic, astrology, &c. They kept their knowledge secret from the people. None of their writings have been handed down to us. It is supposed that the Chaldeans were originally called *Kephenians*, and lived on the Caucasus, and that they settled on the Persian gulf about 800 B. C. See *Babylonia*.

CHALDÆAN CHRISTIANS. See *Sects*, *Syrian Christians*, and *Christians of St Thomas*.

CHALK. See *Lime*.

CHALLENGE, to jurors, is an objection either to the whole panel or array, that is, the whole body of jurors returned, or to the *polls*, that is, to the jurors individually; and it is either *peremptory*, that is, without assigning any reason, or *for cause* assigned. A peremptory challenge is allowed to be made only by the party accused, and not by the government, or prosecuting officer, and only in capital cases; and is said to be permitted on the ground that a man is liable to conceive a prejudice against another from his mere looks and appearance, for which he can give no reason; and such may be the case of the accused; and it is conceded in favour of life, that, in such case, he may exclude the juror without assigning any reason; and also on the ground that, by questioning a juror as to any objection to him, his prejudice may be thereby excited against the prisoner, who, to save himself from the effect of such prejudice, is permitted to have him rejected. The ground on which peremptory challenge is allowed, supposes the prisoner's life to be in danger, and he is not entitled to it if he pleads in bar or abatement; for the trial of these pleas does not decide on his life. He must, before making such challenge, plead "not guilty," or some plea, the trial of which decides on his life. Having pleaded such a plea, the accused might, by the common law, peremptorily challenge thirty-five jurors; but the statute of Henry VIII., c. 14, limited the number to twenty, in felony, and the limitation is to this number in some of the United States. By the act of congress of April 30, 1790, a peremptory challenge of thirty-five jurors is allowed in trials for treason, and twenty in those cases of felony mentioned in the statute. A challenge of the whole panel may be made, because the jury is illegally drawn or summoned, whereby it is not a legal jury; and a challenge of this description may be made by the government as well as by the prisoner. Challenge to the polls may be made both in civil and criminal suits for cause, as that the juror is an alien, not from the proper district, not duly qualified as a freeholder, not of suitable age, &c., or is near akin to one of the parties, is biased, has been guilty of felony, is interested, or is subject to any other exception, according to the common principles of proceeding, or the provisions of any statute on the subject. In court-martials, a prisoner who objects to either of the judges must assign his reasons. In other words, peremptory challenges are not allowed in these courts. The privilege of challenging here belongs equally to the prisoner and the prosecutor. The right of challenging the members of a court-martial prevails on the continent of Europe, as well as in England and America.

Challenge to fight a duel is punishable, in England, with fine and imprisonment. In several of the United States of America, this offence is subject to the additional punishment of ineligibility to any public office, either for life or for a limited term. See *Duel*.

CHALMERS, George, a Scottish antiquary and miscellaneous writer, was born in 1742, at Fochabers, in Banffshire. Having studied law at Edinburgh, he removed to America, where he practised that profession for upwards of ten years, till the colonies declared themselves independent. Mr Chalmers being a keen loyalist, returned to Britain, where his sufferings recommended him to the government, and he was, in 1786, appointed to the respectable situation of clerk to the Board of Trade. The duties of this office he continued to execute, with diligence and ability, for the remainder of his life, a period of thirty-nine years.

Previous to his appointment, he had distinguished himself by various literary undertakings, particularly a work entitled "Political Annals of the United Colonies," which appeared in 1780 in 4to, and manifested a profound knowledge of colonial history, law, and policy. He had also published, in 1782, an Estimate of the Comparative Strength of Great Britain, during the present, and four preceding reigns; and, in 1784, Opinions on Interesting Subjects of Public Law and Commercial Policy, arising from American Independence, the former work in quarto, the latter in octavo. After his appointment, he transferred his attention in a great measure from political science to literature. In 1790, he published his life of Daniel Defoe; in 1794, his life of Thomas Ruddiman, (a very curious book); and in the course of the few subse-

quent years, various pamphlets apologizing for those, himself included, who had believed in the authenticity of the Shakspeare manuscripts forged by Mr Ireland. In 1800, he edited the works of Allan Ramsay, with an elaborate memoir of the poet; in 1805, the works of Sir James Stewart of Coltness, also with a life prefixed; and in 1806, the writings of Sir David Lindsay of the Mount, which were embellished in like manner. The first volume of his "Caledonia," which appeared in 1807, in quarto, displayed a vast extent of erudition and research. It professes to be an account, historical and topographical, of North Britain, from the most ancient to the present times; and the original intention of the author was, that it should be completed in four volumes, quarto, each containing nearly a thousand pages. Former historians had not presumed to inquire any further back into Scottish history than the reign of Canmore, describing all before that time as obscurity and fable. But Chalmers plunged fearlessly into the middle ages, and was able, by dint of incredible research, to give a pretty clear account of the inhabitants of the northern part of the island since the Roman conquest. The historical part of his work, which occupies the first volume, is divided into periods analogous to the different races who predominated in the country: thus we have the Romish period, the Pictish period, the Scottish period (between the subjugation of the Picts, and the intrusion of the Saxons under Malcolm Canmore,) and the Scoto-Saxon period which ends with the accession of Robert Bruce. The remaining three volumes were destined to contain a topographical and historical account of each county, and the second of these completed his task so far as the Lowlands were concerned, when death stepped in, and arrested the busy pen of the antiquary, May 31, 1825. Mr Chalmers is understood to have left the remainder of his great work nearly ready for the press; but hitherto, no bookseller has ventured to publish it.

CHALONS. There are two considerable cities of this name in France—Chalons-sur-Saone and Chalons-sur-Marne. The latter is the most important. Anciently it was called *Catalaunum*. It lies on the river Marne, and is the capital of the department of the Marne. It is 20¼ miles east of Paris; lon. 4° 22′ E.; lat. 48° 57′ N.; population, 10,784. Before the revolution, it was the see of a bishop, and chief place of the generality of Champagne. It has manufactures of coarse woollen cloth, is well built, and contains a Gothic cathedral, ten churches, a public library of 30,000 volumes, a museum, a botanic garden, and a cabinet of natural history. Attila, the scourge of God, was here defeated by the Romans after an obstinate and sanguinary contest.

CHALOTAIS, Louis Rene de Caradeuc de la; attorney-general at the parliament of Rennes. He was born at Rennes, March 6, 1701, and died July 12, 1785. He is celebrated chiefly for a work which he published against the Jesuits, and for the legal process instituted against him, which accelerated the approach of the French revolution.

CHAMADE, in military language (generally derived from the Italian *chiamare*, to call), is a signal, either by beat of drum or sound of trumpet, to obtain a conference, when any matter is to be proposed to the enemy.

CHAMBER. Forcellini defines *camera* an arched roof or ceiling; Herodotus uses the word καμάρα, to signify a covered wagon; Ottfried and Notker, two early German writers, use *kammer* to denote a vaulted chamber, the keeper of which, as early as the time of king Dagobert, was called *camerarius*. The public treasury of the princes was called in the tenth century, *camera*; and in German, down to the present period, those sciences, an acquaintance with which is essential to the proper administration of the different departments of government, are called *cameralwissenschaften*. Words derived from the Latin term *camera* are common in modern European languages: thus *camera* in Italian; in French, *chambre*; in English, *chamber*; in German, *kammer*; in Spanish, *camara*; in Swedish, *kamar*. In many languages, *chamber* is used to designate a branch of government whose members assemble in a common apartment: thus we have the *camera apostolica*, in Rome; *camara de justicia*, in Spain; *chambre des députés*, in France; *kammergericht*, in Germany, &c.

Chamber of a cannon, in artillery; that part of the bore of a cannon which receives the powder with which it is charged.

Chamber of a mortar; the space where the powder lies.

Chamber of a mine; the place where the charge of powder is lodged that is to be used for blowing up the works.

Chamber of a battery; a place sunk under ground to hold the powder, bombs, &c., so as to preserve them from rain or moisture.

Chamber of a lock is the space between the gates of a lock in a canal, in which the barge rises and sinks, so as to pass the lock.

CHAMBER, Imperial. The imperial chamber (in German, *Reichskammergericht*) was a court of the German empire, established at Wetzlar, near the Rhine. It was instituted by the emperor Maximilian I., in 1495. In 1806, when the German empire was dissolved, this court, of course, expired. The imperial chamber had concurrent jurisdiction with the aulic council (q. v.) at Vienna, and was intended, among other things, to adjust the disputes between the different independent members of the German empire, and also such as arose between them and the emperor. The intention of this establishment certainly was good, and its effect, at first, beneficial. But the immense mass of cases which came before it, together with the national pedantry of the Germans, eventually occasioned the protraction of the processes to an interminable length. By the conditions of the peace of Westphalia, after the thirty years' war, particularly by the treaty of Osnaburg, in 1648, the imperial chamber was composed of a Catholic judge, four presidents, named by the emperor (two Catholics and two Protestants), and fifty counsellors, twenty-six of whom were Catholics, and the rest Protestants. After that time the members of the court were much reduced. The sentences were without appeal, but were often powerless, because the different German princes frequently refused to allow them to be executed in their territories. The history of the imperial chamber affords another instance of the correctness of Napoleon's judgment in dissolving the fabric of the German empire, conformably to the demands of the age.

CHAMBERLAIN; a court officer, originally employed, as the name indicates, either to take charge of the private apartments of the king, or of the treasury, called, in the tenth century, *camera*. (See *Chamber*.) The golden key, which is worn by the chamberlains of the European courts on two small golden buttons (as well as the buttons themselves, when the key is omitted), indicates, also, the origin of the office. At present their employment (when their office is not merely nominal) is to attend on the persons of the princes and their consorts. There is generally a chief or high chamberlain. This officer, in England, is called *lord great chamberlain of England*. His office is one of great antiquity and honour, being ranked as the sixth great office of the English crown. He dresses and undresses the king before and after the coronation. There exists, also, a lord

chamberlain of the household, a lord chamberlain of the queen's household, &c. In fact, there are almost as many chamberlains as chambers.

Chamberlain of London is the officer who keeps the city money, which is laid up in a chamber of London, in Guildhall. He also presides over the affairs of masters and apprentices, makes free of the city, &c.

CHAMBERRY, or CHAMBERI (anciently *Cameria, Camerium*, and *Cameriacum*); capital of Savoy, at the conflux of two small rivers, near the Iscre; 12¼ posts E. Lyons; lon. 5° 55′ E.; lat. 45° 26′ N.; population, 11,991; houses, 1985. It is a bishop's see. It contains a cathedral, two parish churches, fourteen convents, four hospitals, a college, and a public library. In its vicinity are excellent baths, much frequented in summer. It is situated in a delightful valley, and is defended by a castle placed on an eminence. Its suburbs are large and elegant; all the houses have piazzas. It has considerable manufactures and distilleries.—At this place the emperor Sigismund erected the earldom of Savoy into a dukedom, and it was once the residence of the princes; but, after the court was removed to Turin, it lost its splendour.

CHAMBERS, Ephraim; a miscellaneous writer, and compiler of a popular dictionary of arts and sciences. He was a native of Milton, in Westmoreland, and was educated at a school at Kendal, under the father of the celebrated bishop Watson. On leaving school, he was apprenticed to J. Senex, a mathematical instrument and globe maker in London. Here he acquired such a taste for the study of science, and made so much proficiency in it, that he not only formed the design of compiling his famous Cyclopædia, but actually wrote some of the articles for it behind his master's counter. The first edition of this work was published in 1728, in 2 vols. folio; and Chambers was soon after chosen F. R. S. Two subsequent editions, in 1738 and 1739, appeared previously to his death, which happened May 15, 1740. Several improved editions of the Cyclopædia have been published, and it has served as the basis of many subsequent works. See *Rees, Abraham.*

CHAMBERS, David; a Scottish historical and legal writer, of the sixteenth century; was a native of Ross-shire. He received his education in the laws and theology at Aberdeen college, and afterwards pursued his studies in the former branch of knowledge in France and Italy. The earliest date ascertained in his life is his studying at Bologna under Marianus Sozenus in 1556. Soon after, returning to his native country, he assumed the clerical offices of parson of Study and chancellor of the diocese of Ross. His time, however, seems to have been devoted to the legal profession, which was not then incompatible with the clerical. In 1564 he was elevated to the bench by his patroness queen Mary, to whose fortunes he was faithfully attached through life. He was one of the high legal functionaries entrusted at this time with the duty of compiling and publishing the acts of the Scottish parliament. The result of the labours of these men was a volume, now known by the title of "the Black Acts," from the letter in which it is printed. After the fortunes of his mistress experienced an overthrow, Chambers, unable to protect himself from the wrath of the ascendant party, found it necessary to take refuge in Spain. He here experienced a beneficent protection from king Philip, to whom he must have been strongly recommended by his faith, and probably also the transactions in which he had lately been engaged. Subsequently retiring to France, he published, in 1572, *Histoire Abrégée de tous les Roys de France, Angleterre, et Ecosse,* which he dedicated to Henry III. His chief authority in this work was the fabulous narrative of Boece. In 1579 he published other two works in the French language, *La Recherche des singularites, les plus remarkables concernant l' Estait d' Ecosse*, and *Discours de la legitime successsion des femmes aux possessions des leurs parens et du gouvernement des princesses aux empires et royaume.* On the return of quieter times he returned to his native country, where he was, in the year 1586, restored to the bench, in which situation he continued till his death in November, 1592.

CHAMBORD; a castle, park, and village, with the surrounding territory, comprising 5000 acres of forest and twenty-three farms; the whole ground embraces 11,000 acres. It is situated in the department of Loire-and-Cher, near Blois. It was intended by the French nation as a present to the son of the murdered duke of Berry, the young duke of Bordeaux; but the conduct of the ministry in this affair did not meet with the approbation of the public. The splendid castle of Chambord is situated in the middle of a park, enclosed by walls extending eight leagues. It contains 440 rooms, 13 large staircases, and stalls for the reception of 1200 horses. It was built, in the Gothic style, by Primation, for Francis I., and completed under Louis XIV. Here Francis I. indulged his inclination for gallantry; here the arts first sprang to life in France; and here king Stanislaus Leczinsky resided for nine years. In 1745 it was given by Louis XV. to marshal Saxe, who died there in 1750. The emperor Napoleon gave the domains of Chambord to the prince of Wagram (Berthier), and constituted it the principality of Wagram. When the widow of the marshal offered the estate for sale, a company was formed, which bought it for 1,542,000 franks, and gave it to the duke of Bordeaux in the name of the people of France, on the day of his baptism, May 1, 1821. Several lithographic prints of Chambord, with descriptions, were published by Engelmann, Paris, 1822; also a large lithograph by Isabey, the largest of the kind in France.

CHAMBRE ARDENTE (*French*; burning chamber); formerly, in France, a chamber in which state prisoners of high rank were tried by torch-light. The chamber was hung with black cloth. When Francis II., in the sixteenth century, established a court to try the Protestants, who were usually condemned to be burned, the people called this court, likewise, *chambre ardente*, in allusion to its sentences.

CHAMBRE INTROUVABLE (*French*; the chamber not to be found); an appellation that was bestowed, in ridicule, on the French chamber of deputies, which met after the second restoration of Louis XVIII., for its coldness and anti-nationality. This appellation has been preserved.

CHAMELEON (*chamæleo*, Daud.); a genus of reptiles belonging to the *saurian* or lizard-like order, a native of parts of Asia and Africa. The very remarkable power which these animals possess of changing their colour, and at pleasure producing a succession of rich and beautifully varied tints over the whole body, at a very early period called the attention of observers to their habits. Aristotle has left a very perfect description of the chameleon, in the eleventh chapter of his second book on the history of animals. Various poets and fabulists have, at different periods, contributed to its celebrity, and, by inaccurate or fanciful representations, have rendered it far more of a prodigy than nature ever designed it to be.

The skin of the chameleon is composed of a sort of small, scaly grains, and, under ordinary circumstances, is of a greenish-grey colour. The general form of the body reminds one of the lizard, but the

trunk is compressed, and the back highly ridged or cutting. The occiput, or posterior part of the head, is elevated pyramidically; the eyes are large, projecting far outwards, yet almost entirely covered over by the skin, except immediately opposite the pupil. What is still more singular, the eyes are capable of moving independently of each other, taking different directions at the same moment. There is no visible external ear; the tongue is fleshy, cylindrical, and capable of great elongation; the teeth are trilobate. The first ribs unite with the sternum, the succeeding with their correspondents of the opposite side, enclosing the abdomen in a perfect circle. Each of the feet has five toes, but these are separated into two portions (one containing two and the other three toes) by the skin, which covers them entirely to the nails. The tail is long, round, and prehensile, or capable of grasping twigs or branches to sustain the animal. The lungs of the chameleon are vesicular, and so large that, when inflated to the utmost, the whole body becomes almost transparent. With the different degrees of inflation, the surface undergoes changes of colour, owing to the variations produced in the distribution of the blood, and not, as has been fabled, by the animal assuming the colour of the body upon which it happens to be placed. It is scarcely possible to witness any thing more curious or beautiful than the rapid transitions from hue to hue, exhibited by the chameleon, when aroused to motion. The chameleons are all exceedingly slow, dull, and almost torpid. The only part which they move with celerity is their long tongue. This organ is clothed, at its extremity, with a viscid, gluey mucus, and is darted out for the purpose of captur ing insects, upon which the animal subsists. As they feed but seldom, and are frequently seen inhaling the air, to inflate their bodies as above mentioned, an cient observers concluded that they fed altogether on air; but closer attention to their habits has shown that they require a diet rather more substantial. Three or four species are well known, and are natives of Africa and the Molucca islands. They pass their lives altogether upon trees, feeding upon small insects, for which their construction shows them to be perfectly adapted. Doubtless new species will be added to the catalogue, as the countries of which they are natives shall be more fully explored.

CHAMOIS (*antilope rupicapra*, Pall.); a well known species of the genus *antelope* (q. v.), found only in high, mountainous regions, where they feed, in small flocks or families, on the highest cliffs affording vegetation, which are almost inaccessible to man. The chamois are exceedingly shy, and have very acute senses, so that it is only by great patience and skill, that the hunter can come sufficiently near to shoot them. They are so swift, and leap with so much vigour, and with such sureness of foot, as to render it impossible to overtake them in a fair chase.

Hence the hunters of the Alps, where a few of this species are still found, are obliged to encounter the greatest perils in pursuit of this favourite game; and, owing to the occurrence of sudden fogs, storms, avalanches, and various accidents, may always be regarded as placing their lives in great jeopardy. Chamois are found among the mountains of the Caucasian range, and among the heights of the Himalaya, in greater abundance than in the Alps and Pyrenees, where they are so closely pursued. Their flesh is considered a very superior article of food; but whether it is in fact much better than that of other animals of the antelope or deer kind, may reasonably be doubted. The skin of the chamois is wrought into a soft, pliable leather, well known by the name of the animal furnishing it. During the winter, the chamois keeps in the caverns and hollows of the rocks. Its voice is a short, sharp whistling or blowing. Two and sometimes three young are produced at a birth.

The chamois is about three feet in length, and two feet high; its head resembles that of the domestic goat, but the nostrils are less, and the upper lip not so prominent. It has no muzzle nor beard. The horns are six or seven inches long, round, almost smooth, at first straight and perpendicular, and suddenly terminating in a hook directed backwards, and slightly downwards. There are no *larmiers*,* nor cutaneous appendages or glands, in front of the lower part of the neck. The skin is clothed with two sorts of hair—a very abundant and brownish woolly, and a dry and frangible, silky hair, varying with the seasons, upon the body exclusively, of a rather deep-brown in winter, of a brown fawn colour in summer, and slightly grey in the spring. Both sorts of hair are grey at the base throughout the year. The head is of a pale yellow colour, excepting a black-brown band, which commences near the nose, and ends at the base of the horns and ears, after surrounding the eyes. The tail is black. The inside of the thighs and the ears are white. The hoofs are concave beneath, and terminate by a projecting edge, especially on the outside. The female closely resembles the male, except that she is much smaller. The kids are of a deep yellowish colour, having the under jaw, both sides of the head, and the throat, white. There is a black band, beginning at the corner of the mouth on each cheek, surrounding the eye, and ending on the forehead, without meeting the band of the other side; end of the tail black; thighs white; a dorsal line, crossed by a transverse one, upon the shoulders.

CHAMOMILE. See *Camomile*.

CHAMOMILE, ROMAN (*anthemis nobilis*, Lin.); a perennial plant, native of Europe, and flowering in June or July. Chamomile flowers, such as they are found in the shops, are white, desiccated, of a very aromatic and rather pleasant smell, and of a very bitter and warm taste. They contain an essential oil, of a fine blue colour, a gummo-resinous principle, camphor, and tannin. Water and alcohol dissolve their active principles. The Roman chamomile is a moderately energetic stimulant, possessing, on account of its bitterness, some tonic properties, which have rendered it a popular remedy for a number of diseases. It is employed with success to stimulate the digestive functions in dyspepsia, chlorosis, gout, in flatulent colics, &c. It is also advantageously used in slight intermittent fevers, and spasmodic affections. A strong infusion taken warm, and in a large quantity, provokes vomiting; in consequence of which, it is used in this manner, especially in North America and England, in order to assist the action of emetics. It is also administered with advantage as an anthelmintic. The common chamomile (*matricaria chamomilla*, Lin.) is now out of use. See *Camomile*.

CHAMOUNI, CHAMOUNIS, CHAMOUNIX, or CHAMOIX; a town of Savoy, in Upper Faucigny; twelve miles E. S. E. Chamberry, forty-two S. E. Geneva; population, 1500. It is situated in a celebrated vale, which lies N. of mont Blanc, S. E. of the lake of Geneva; eighteen miles long, and one and a half broad. The river Arve flows through the centre of it. The scenery surrounding the vale is unrivalled in beauty and grandeur. It is 3300 feet above the sea. It is visited by all travellers in Switzerland.

* The *larmier* is a construction appended to the eyes of various animals of the deer kind, &c., for which there is no English name Its use is unknown.

CHAMPAGNE; before the revolution, a country of France, bordered E. by Lorraine and Franche-Comté, S. by Burgundy and Nivernois, W. by the Isle of France and Picardy, and N. by Flanders. It is about 195 miles in length, and 135 broad. The land is fertile, and produces the celebrated wine called after its name; also much grain and pasturage. Troyes was the capital. Population, 1,200,000. Square miles, 11,880. It now forms the whole of the departments of Ardennes, Marne, Upper Marne, Aube, and part of those of Yonne and Seine-and-Marne.

CHAMPAGNE is a wine which is made chiefly in the department of the Marne, in the *ci-devant* province Champagne, and is commonly divided into river and mountain wines (*vins de la rivière de Marne*, and *vins de la montagne de Reims*); the former being, for the most part, white, the latter, red. Not all of these wines are sparkling or frothing, though by the name *champagne*, is generally understood such wine as has been subjected to an imperfect fermentation, and contains a quantity of carbonic acid gas, generated during the insensible fermentation in the bottle, which is disengaged on removing the pressure by which it was detained in solution. The briskest wines are not always the best; they are, of course, the most defective in true vinous quality; and the small portion of alcohol which they contain immediately escapes from the froth as it rises on the surface, carrying with it the aroma, and leaving the liquor that remains in the glass nearly vapid. For it has been shown, by Humboldt, that, when the froth is collected under a bell-glass surrounded with ice, the alcohol becomes condensed on the sides of the vessel. Hence the still, or the creaming or slightly sparkling Champagne wines (*vins crémans*, or *demi-mousseux*) are more highly valued by connoisseurs, and fetch greater prices than the full-frothing wines (*vins grand mousseux*). By icing these wines before they are used, the tendency to effervesce is in some degree repressed; but, when they are kept cool, this precaution is unnecessary. In general, it may be observed that the vineyards on the banks of the Marne supply the choicest wines, and that the quality degenerates in proportion as they recede from the river. Among the white wines of Champagne, the first rank is generally assigned to those of Sillery, the produce of the vineyards of Verzenay, Mailli, Raumont, &c. Of the Reims mountain wines, those of Verzi, Verzenay, Mailli, Bouzy and St Basle, are most esteemed; but the Clos St Thierry furnishes perhaps the finest red Champagne. The soil of the principal vineyards throughout Champagne is composed of a loose marl, resting on chalk, and sometimes mixed with flints. For the manufacture of the white Champagne wines, black grapes are now generally used. In making the red wines, the grapes are trodden before they are introduced into the vat. Champagne, when well made, and placed in cool cellars, will retain its good qualities from ten to twenty years. For further information respecting this delicious liquor, and the art of making it, see A. Henderson's *History of Ancient and Modern Wines*, London, 1824, 1 vol., 4to.

CHAMPAGNE, Philip, an eminent painter, was born at Brussels, in 1602, and went to Paris in 1621, where he was afterwards appointed painter to the queen Maria de Medicis, who gave him the direction of the paintings for the Luxembourg. He commenced the *Galerie des Hommes illustres*. In the suburb St Jacques he painted six pictures for the Carmelites. Their church contains a crucifix by him, which, though painted on a horizontal surface, appears to the most practised eye to be perpendicular. The paintings in the dome of the Sorbonne are among his best works. He was director of the academy of fine arts. When he began to feel the infirmities of age, he retired to the Port Royal, where his daughter was a nun. She afforded him the subject for a beautiful painting. She is represented seated, a protracted fever having brought her to the verge of death, given up by the physicians. She is praying with a sister of the convent, and regains her health. The figure of the daughter, particularly her head, is of extraordinary beauty. The museum of Paris possesses, besides this painting, six others of the same artist, among which are a *Lord's Supper* and a *Mater Dolorosa*. Numerous works of his are also to be found at Paris, and scattered through many towns of France. Champagne was very conscientious. He would never paint naked figures. He deserves a very high place amongst the painters of the Flemish school. He died in 1674.

CHAMPARTY, or CHAMPERTY (*campi partitio*, because the parties in champarty agree to divide the land, &c., in question), is a bargain with the plaintiff or defendant in any suit, to have part of the land, debt, or other thing sued for, if the party that undertakes it prevails therein; whereupon the champertor is to carry on the party's suit at his own expense. It is a species of maintenance, and punished in the same manner. See *Maintenance*.

CHAMP CLOS. This was, from the commencement of modern history, and long afterwards, a place authorized by the laws made by sovereigns for the purpose, and consecrated to particular combats between those who wished to determine, in that manner, either a lawsuit or dispute of honour. This name was also given to the place set apart for tournaments.

CHAMP D'ASILE; a settlement of French soldiers, in the province of Texas, which was put down in its infancy by the government of Mexico, because Spain was unwilling to permit its existence on the borders of that state. In October, 1818, the colonists were dispersed by a party of Spanish troops. General Lallemand, who was banished from France, and resided in New Orleans, collected them again, and led most of them to a colony established by French emigrants on the Tombigbee, in the state of Alabama. The district where they settled, and part of which they purchased, while the rest was granted them, was called *Marengo*, and the capital which they built was called *Aigleville*. Aigleville was founded principally under the direction of generals Clauzel and Lefebvre Desnouettes. In the treaty concluded by the United States with Spain, in 1819, respecting the cession of Florida, Texas was given up, without reserve, to New Spain. At the same time, the republic of Texas was formed, under a president, general James Long, who was joined by several Frenchmen from the Champ d'Asile. The capital was *Nacodoches*. This republic, likewise, was soon dissolved, and general Long returned to the United States. Texas, at present, belongs to the United Mexican States, forming a part of the state of Santander. See *Texas* and *San Felipe*.

CHAMP-DE-BATAILLE (*field of battle*), in military language, is the ground on which an action is fought. The commander who obliges his adversary to quit this ground, and abandon it to him, obtains the victory.

CHAMP-DE-MARS, or DE-MAI (*campus Martius*). The *campus Martius* was a large field on the Tiber, in ancient Rome, near the modern Ponte Molle. After the expulsion of the last king, who was the owner, it was consecrated to Mars, and served the Roman youth for a place of military exercise. The people used to assemble there for the election of magistrates, and the place was adorned

with splendid buildings and rows of pillars. At a short distance appeared the tomb of Augustus and the Pantheon, now the *Maria rotunda*. When the Franks had conquered the Gauls, in 486, they held their public assemblies, according to the German custom, in the open air. In the fifth and succeeding centuries, these assemblies were called, from the time of meeting, *March-fields*. In the 8th century, they were transferred by Pepin, the father of Charlemagne, to the month of May, and called the *May-fields*; but the plain where the Frankish kings annually reviewed the army, had the name of the *field of Mars*, or the *campus Martius*. At the May-fields, the king was present with the members of his court, the bishops, the nobles, and the people. The latter, however, long neglected the privilege of attendance, and were at length deprived of it. All questions relating to public affairs, such as war, peace, the enactment of laws, were decided by the majority. Pepin called together only the nobility and the clergy; but Charlemagne ordered that every count should bring with him thirteen assessors, or the same number of the most respectable men within his jurisdiction, to represent the people in the general assembly. The first descendants of Capet departed from this usage; but Philip IV., who reigned from 1285 to 1314, restored the third estate, by calling together delegates from the cities.

The modern Champ-de-Mars in Paris is an extensive plain, surrounded by trenches, and furnished with a fourfold row of trees on each side of it. The French guards, and the young men in the military school, used it for their place of exercise. During the revolution, public festivals were celebrated, and races took place here. Even Louis XVI. and his family took part in the preparations made here, in 1790, for a great *fête de la fédération*, which was succeeded by scenes of tumult and bloodshed. In 1815, Napoleon selected the Champ-de-Mars for the scene of a general assembly of the French people with deputies. He determined, after his return from Elba, to lay before the representatives of the nation the articles of a supplementary constitution, called the *Acte additionnel*, which he had drawn up in the form of the Frankish capitularies, and thus, by an imposing show, to establish the legality of his second accession to the throne. This meeting was held, June 1, 1815. After a solemn mass, Dubois, one of the five hundred deputies from the central committees of the electoral colleges, read an address expressive of the allegiance of the French people to the government of Napoleon. The high chancellor then made known the assent of the people to the proposed supplement to the constitution. Although no deputies appeared from forty of the departments, the herald announced that the *acte* was accepted by the French nation. Accordingly Napoleon signed it, and declared, in a speech before the assembly, that he enjoyed his distinction as an emperor, a consul, a soldier, in fine, that he received every thing, from the people. He then swore to observe the fundamental laws of the empire, and to enforce their observance. The whole assembly, consisting of about 20,000 persons, repeated the oath. Then a *Te Deum* was chanted, and Napoleon distributed the eagles to the national guards, and the sea and land forces, who were drawn up around him in the form of squadrons and battalions. Inclusive of 27,000 national guards, the whole number amounted to 50,000 men. After this festival, which partook of a political, religious, and military character, Napoleon assembled the chamber of peers, and of the deputies of the people. Three weeks after the commencement of the session, the chamber received the abdication of the emperor.

CHAMPE, John, was born in Loudon county, Virginia, and, in the year 1776, at the age of twenty-four, having entered into the American revolutionary army, was appointed a sergeant-major in Lee's regiment of cavalry. After the discovery of Arnold's treason, Washington received frequent intelligence that many American officers, and one brigadier, high in his confidence, were concerned in the conspiracy, and, wishing to ascertain whether such was the case, or the report only an artifice of the British general to weaken his confidence in his officers, he desired major Lee to select from his legion some bold and trusty individual, who should proceed to the enemy's camp in the character of a deserter, make himself known to one of Washington's confidential agents in New York, obtain, through his means, evidence of the innocence or guilt of the suspected officers, and transmit the result to major Lee. He was also to seize Arnold, and convey him alive to the American camp, but by no means to kill him, as Washington only wished him to undergo public punishment, and hoped that, by his arrest, he would be able to unravel the conspiracy, and save the life of Andre. Lee fixed upon Champe to execute the project, who expressed his readiness to encounter any personal danger for the cause of his country, but loathed the idea of desertion. Lee, however, finally induced him to undertake the hazardous service. Having taken down his instructions in a peculiar character, and passed the American lines with great difficulty, he reached the British galleys lying below Paulus Hook, hotly pursued by his comrades as a deserter. After an examination by Sir Henry Clinton, he was consigned to the care of general Arnold, who retained him in his former rank. One object of his enterprise—the preservation of Andre—was defeated by the precipitancy of that officer in confessing the nature of his connexion with Arnold, before preparations could be made for the abduction of the latter. Champe, however, obtained full evidence of the innocence of the American officers, and resolved on making a bold attempt to carry off Arnold. But, unfortunately, on the very night when the design was to have been executed, by seizing and gagging Arnold in a private garden, where he was accustomed to spend some time previous to retiring to rest, and then conveying him secretly to a boat, which Lee had stationed in the Hudson, he shifted his quarters in order to superintend the embarkation of some troops, and thus the plot was frustrated. On the junction of Arnold with lord Cornwallis in Virginia, Champe found an opportunity of escaping to the army of general Greene, who provided him with means to return to Washington's camp, where he safely arrived, to the surprise and joy of his old confederates. When Washington assumed the command of the army under president Adams, he caused inquiry to be made concerning Champe, designing to reward him by promotion for his exemplary conduct; but he learned, with sorrow, that he had recently died in Kentucky.

CHAMPFORT, Sebastien Roch Nicolas, was born in 1741, in a village near Clermont, in Auvergne, and went, while he was young, to Paris. He was then called *Nicolas*, and of his parents knew only his mother, for whom he always retained the tenderest affection. Doctor Morabin was his first patron and instructor. With beautiful features, and an active mind, ingenious, and impatient of restraint, he entered the theatre of life under the name of *Champfort*. He wrote several articles for the *Journal Encyclopédique*, and was one of the editors of the *Vocabulaire Français*. He presented a number of papers to the French and other academies, and wrote some comedies, which were received with great approbation. His *Le Marchand de Smyrne* is still per-

formed. His health soon began to decline, and his income was scarcely sufficient to meet his expenses. Chabanon, his most intimate friend, who enjoyed a pension of 1200 livres, compelled Champfort to accept of it. After he was restored to health, he retired to the country to labour and to study. He prepared some of the most important articles in the *Dictionnaire Dramatique* (1776, 3 vols.), and completed his tragedy *Mustapha et Zéangir*. This production procured for him the office of secretary to the prince of Condé, which he occupied for a time, and then retired to Auteuil. In 1781, he was admitted to the *Académie Française*. His fine inaugural address was his last purely literary work. After this, he married, and lived in retirement, till the death of his wife, when he became reader to the princess Elizabeth, the sister of the king. At the beginning of the revolution, Champfort was connected with the leading characters of the two parties which hastened the approach of the revolution, the one by upholding, the other by attacking, abuses. He endeavoured in vain to enlighten the former party, and, being compelled to choose between them, he sacrificed his interest, and joined the one whose character and principles were most agreeable to his own. His connexion with Mirabeau and others at first absorbed his whole attention. He had an important part in several of Mirabeau's speeches and writings. After a time, Champfort's condition was altered, but his principles remained the same. He lost his pension and his office, and supported himself wholly by his own exertions. He was appointed, by the minister Roland, librarian in the great national library; and thus his situation was, for a short time, improved. But, disgusted with the horrors of the revolution, he expressed himself without reserve, and was thrown into prison with Barthélemy and two other officers of the library. He was soon set at liberty; but his short confinement had filled him with such horror, that, when he was to be thrown into prison a second time, he attempted to put an end to his existence. The care of his friends, and medical aid, saved him for a time; but he died in April, 1794, in consequence of his wounds. His writings bear the marks of much study and pure taste. His integrity, fidelity, and disinterestedness, cannot be disputed. His works were published in 1795, by Ginguené, in 4 vols., and two editions have appeared since.

CHAMPION. In the rudest state of society, men revenge their own wrongs without restraint. One step is made towards a better state of things, when the state (rude as the beginnings of political society may be) confines this right within certain bounds, and allows it to be exercised only with certain formalities. In some countries, however, particularly in England, the legal recognition of the right of private combat (see *Combat*) had this injurious effect, that the practice became so settled as to be allowed to continue, even after more rational ideas had grown up on the subject of the administration of justice. The combat, after it had become a common means of settling disputes, was not always waged by the contending parties. This was the case, indeed, in appeals of felony, and if the heir, either from sex or age, was incapable of *waging his battle*, as it was called, the question was left to a more rational mode of settlement. But, in the writ of right, the last and most solemn decision respecting real property, the tenant was required to produce his champion, who threw down his glove as a challenge to the champion of the demandant, and the latter, by taking it up, accepted the challenge. The laws authorizing judicial combat, though fallen into disuse continued to disgrace the English statute-book till the beginning of the reign of George IV., when an appeal of murder having been made in the case of Abraham Thornton (reported 1 Barnwell and Alderson), he was advised by his counsel to claim his right of trial by battle. (See *Appeal*.) As the judges decided that this could not be refused him, the next heir, the brother of the deceased, a lad of sixteen, declined any further proceedings. Even the right to the English crown was, in some degree, put in issue, by appeal to judicial combat; and the appearance of a champion, offering battle to any one who gainsays the right of the king to the crown, is still a part of the ceremonial of an English coronation. At the last coronation a question was long agitated in the court of claims, as to the right of a champion to appoint a deputy, in case of his personal incapacity, either through age or profession. The eldest son of the official champion (Mr Dymocke, in whose family the championship is hereditary, and who was himself in holy orders) was at length allowed to appear as his father's representative.—"When I see," says a German writer, "the number of follies with which governments have leisure to concern themselves, I cannot think that nations are very difficult to be governed."

CHAMPLAIN; a lake of America lying between New York and Vermont, extending from Whitehall, in New York, to St John's in Lower Canada; about 130 miles long, and from one to fifteen broad, containing 600 square miles, about two-thirds of which lie in Vermont. It contains upwards of sixty islands, the largest of which are North and South Hero, and Motte island, and receives the waters of several rivers. Otter creek, Onion river, Lamoile and Missisque flow into it from Vermont; and the Chazy, Saranac, Sable, Bouquet, and Wood rivers from New York. It discharges its waters northward into the St Lawrence by the Richelieu or Sorelle. Two steam-boats ply on this lake, between Whitehall and St John's. The shipping on the lake, in 1816, amounted to 800 tons, belonging chiefly to Burlington. The principal towns on the lake are Burlington, St Alban's, Plattsburg, and Whitehall.—Sept. 11, 1814, commodore Macdonough, commander of the American fleet, gained a victory over the British fleet, on this lake, in Cumberland bay, which lies directly in front of the town of Plattsburg.

Champlain Canal, in the state of New York, forms a communication between lake Champlain and the navigable waters of the river Hudson. It commences at Whitehall, at the south end of the lake, reaches the Hudson at Fort Edward, is continued along the west bank of the river, and forms a junction with the Erie canal at Watervliet, the whole length, including about seventeen miles of improved natural navigation in Wood creek and Hudson river, being sixty-four miles. It is forty feet wide on the surface, twenty-eight at the bottom, and four deep. The amount of lockage is eighty-four feet. This canal was begun in June, 1818, and completed in November, 1822. See *Canal*.

CHAMPLAIN, Samuel de; a French naval officer in the seventeenth century, who explored the gulf of St Lawrence, in North America, founded Quebec and Montreal, in Canada, and gave his name to an inland lake, which it still retains. He was king's lieutenant, and afterwards governor-general of Canada, where he died in 1634. M. de Champlain was the author of a curious work, entitled *Voyages and Travels in New France, or Canada* (1632, 4to).

CHAMPOLLION; two French literati of this name, viz:

Champollion (J. F.) the Younger, was born at Figeac, 1790, became professor of history at Grenoble, studied the Coptic and other Oriental languages, investigated the inscription on the Rosetta stone (q. v.) and several rolls of papyrus particularly while he

was at Turin, in 1823 and 1824, and published the *Panthéon Egyptien*—a collection of designs taken from figures on Egyptian monuments, with explanations (Paris, 1824, 4to). He next published his *Précis du Système Hiéroglyphique des Anciens Egyptiens*, with engravings (Paris, 1824). In this work, he gives his discoveries of the phonetic alphabet, in which he supposes he has found a key to the whole system of hieroglyphical writing. Hieroglyphics, according to his theory, are partly phonetic (those which serve as signs for sounds), partly hieratic (those which express whole ideas). The two kinds of writing, he says, are intermingled in the ancient inscriptions. Champollion's system rests on the views of Warburton and Young. Th. Ausonioli, in his *Analyse de la Théorie de M. Champ. le Jeune, sur les Hiérogl. des anc. Egypt.* (Paris, 1824), has undertaken to show that his grounds are untenable. In 1825, Champollion delivered lectures on his system in Rome. In 1826, Charles X. appointed him to superintend the new department of the royal museum in Paris (in the Louvre), which contains the antiquities of Egypt, brought by Drovetti to Leghorn, and purchased by the king, and the monuments of Eastern antiquity in general. In 1828, M. Champollion went with an expedition of learned men to Egypt, at the expense of the king. The results of this journey we shall give, in the articles *Egypt* and *Hieroglyphics*. He died at Paris in March, 1832.

Champollion-Figeac, J. J., the elder brother of the preceding, and his instructor, was born at Figeac, in Quercy, in 1779. He was formerly professor at Grenoble, and has distinguished himself by his *Lettre sur l'Inscription du Temple de Dendérah*, and other archæological essays. His *Antiquités de Grenoble* (Grenoble, 1807, 4to) is much esteemed. His *Annales des Lagides* (Paris, 1819, 2 vols.) received the prize of the royal academy of inscriptions, and was completed by him in 1820. He has published, also, inquiries into ancient chronology. With Motte, the lithographer, he published *Les Tournois du Roi René* (after the original manuscripts and designs found in the royal library), with observations, and twenty engravings (Paris, 1826, folio).

CHANCE is used to signify accident, and also probability. The latter is its meaning in mathematics. The doctrine of chances teaches how to find the probability of a given event taking place from an examination of the circumstances affecting it. It is called, more properly, by the French, *calcul des probabilités*. It is important for the calculation of insurance risks, the worth of life-annuities, &c. Pascal, Huygens, De Moivre, Parisot (*Traite du Calcul conjectural*, &c., Paris, 1810, 4to), Laplace, Lacroix (*Traité élémentaire du Calcul des Probabilités*, Paris, 1816), and others, have written ably on this subject. James Bernouilli undertook a work *De Arte conjectandi*, but his death prevented its completion. See *Probability*.

CHANCE-MEDLEY; homicide happening either in self-defence, on a sudden quarrel, or in the commission of an unlawful act, without any deliberate intention of doing mischief.

CHANCEL is that part of the choir of a church, between the altar or communion-table and the rail that encloses it, where the minister is placed at the celebration of the communion.

CHANCELLOR; an officer supposed to have been originally a notary or scribe, under the emperors, and named *cancellarius*, because he sat behind a lattice, called, in Latin, *cancellus*, to avoid being crowded by the people. There are, however, other derivations of this title. Whatever may have been its origin, the office and name of *chancellor* were undoubtedly known at the court of the Roman emperors, where the title seems to have signified, originally, a chief scribe or secretary, who was afterwards invested with several judicial powers, and superintendence over the other officers of the empire. From the Roman empire the title and office passed to the Roman church, and hence every bishop has, to this day, his chancellor, the principal judge of his consistory. When the modern kingdoms of Europe were established upon the ruins of the empire, almost every state preserved its chancellor, with different jurisdictions and dignities, according to their different constitutions. In all, he seems to have had the supervision of all charters, letters, and such other public instruments of the crown as were authenticated in the most solemn manner, and, therefore, when seals came into use, he had always the custody of the king's great seal. This officer has now great authority in all the countries of Europe.

The *Lord High Chancellor of England* is the first judicial officer of the crown; and first lay person of the state, after the blood royal. He is created neither by writ nor patent, but by the mere delivery of the great seal into his custody. In like manner, the act of taking away the seal by the king determines the office. He is, *ex officio*, a privy councillor, and, according to lord Ellesmere, prolocutor of the house of lords by prescription. The question of separating the office of prolocutor of the lords from the office of chancellor has been sometimes agitated. He has the appointment of all justices of the peace in the kingdom, is visitor, in the king's right, of all royal foundations, and patron of all crown livings, under the value of twenty marks, in the king's books. The office having, in early times, been always filled by ecclesiastics (for no others were then capable of an employment requiring so much writing), he became keeper of the king's conscience; and, by special appointment, he now exercises a general superintendence as guardian over all infants, idiots, and lunatics; though these latter powers are not necessarily attendant on his office, as Blackstone seems to have imagined, but can be delegated by the crown to any other judicial officer; as, in fact, they were delegated even as late as the reign of James I., when the seals were held by doctor Williams, then dean of Westminster, and afterwards bishop of Lincoln. The great seal has been not unfrequently put in commission, and was last so on the resignation of lord Thurlow, in the year 1793.

The *Vice Chancellor* is an officer recently created, who takes precedence after the lord chief justice of the common pleas, and before the chief baron. He is addressed, like the master of the rolls, by the style of his *honour*. Though the appointment was made with a view to meet the complaints against delay, and to facilitate the business of suitors, yet, as an appeal lies afterwards to the chancellor, the experiment has not been attended with great success. For an account of the court of chancery, see *Equity, Courts of*.

The *Chancellor of the Exchequer* is the principal finance minister of the government, and, as all questions of supply originate in the house of commons, a peer cannot be conveniently appointed to this office. When the first lord commissioner of the treasury is a commoner, the two offices are generally united.

The *Chancellor of the duchy of Lancaster* presides in the court of the duchy chamber, to decide questions relating to lands holden of the king, as duke of Lancaster; but it does not appear that this is a court of record. The chancellorship is generally bestowed during pleasure, though there are two instances of its being granted for life; the last being that of the celebrated lord Ashburton. The chancellor of the duchy of Lancaster is one of the king's cabinet ministers.

The *Chancellor of Oxford* is the supreme head of that university, elected for life by the members of convocation. He is generally a nobleman of the highest

rank, who is installed with great ceremony. The duties of the office are almost entirely discharged by the vice-chancellor; the chancellor's own acts being limited to the signing of diplomas, &c.—Under the vice-chancellor are four pro-vice-chancellors, nominated by him from among the heads of colleges, to one of whom, in his absence from the university, he delegates his authority.

The *Chancellor of Cambridge*, whose duties are very similar to those of the chancellor of Oxford, is elected biennially by the senate; but there is no instance, at least in modern times, where a re-election has not taken place.—The title *chancellor* is given, in England, to several other officers of inferior bodies.

The chancellor was one of the highest officers in the German states, and, by the influence of his office, was one of the most important. In Germany, this dignity was, from the remotest times, vested in one of the higher clergy, until the head of the German clergy, the archbishop and elector of Mentz, united it for ever with his office as arch-chancellor of the empire. The two other spiritual electors held the same dignity, but it was merely titular; the archbishop of Cologne, as arch-chancellor of Italy; the archbishop of Treves, as arch-chancellor of Gaul, and Arles, i. e., the kingdom of Burgundy, once belonging to Germany. The arch-chancellorship of Mentz, on the contrary, had important duties attached to it —the direction of the diet, and of the public business, as well as of all the imperial chanceries. The elector appointed a vice-chancellor, who was the actual minister of the empire at the imperial court.—The chancellor of France was the highest officer of state, and the only one, who, when once appointed, could not be dismissed. In case, therefore, it was desired to remove him from participation in affairs, a keeper of the seals (*garde des sceaux*) was appointed. As the chancellor was properly the minister of justice, he was chosen from the body of jurists. A relic of his spiritual character was, that all his furniture, liveries, and even his coach, were black. This dignity is now restored. Besides the chancellor of the kingdom, the *chancelier de France*, the queen (in Germany, also, the empress had her arch-chancellor, the bishop of Fulda), the sons and grandsons of the king, the first prince of the blood, the orders of knighthood, the universities, &c., all had their chancellors. The German states began about the middle of the fifteenth century to appoint chancellors, whose duties are widely different, but are generally united with the office of president of the higher judicial and executive authorities. In Bavaria, for example, there were a chancellor of the privy council, and a court-chancellor, a chancellor of fiefs, and executive chancellors, in the different provinces. King Frederic II. (the Great) of Prussia established, some years after his accession to the throne, in 1747, the office of a grand-chancellor and *chef de justice* for the famous Samuel de Cocceji, to whom he had committed the reform of the judiciary. He had several successors in this dignity, but it was finally abolished. In the Austrian monarchy there are three court-chanceries—1. the imperial-royal, at the head of which stand the high court-chancellor, with three other court-chancellors, viz., the Bohemian-Galician, the Lombardo-Venetian, and the Austrian-Illyrian; 2. the Hungarian; and 3. the Transylvanian. In Austria, almost every office of importance is called a *court* office. The dignity of a privy-chancellor of the court and state was conferred, after a long interruption, on prince Metternich.

CHANCERY. See *Equity, Courts of.*

CHANGES. See *Combination.*

CHANNEL, English; the sea between England and France, the passage of which is often very tedious for vessels going from the Atlantic into the German ocean. See *Calais* and *Dover.*

CHANNELS, or CHAIN WALES, of a ship broad and thick planks projecting horizontally from the ship's outside, abreast of and somewhat behind the masts. They are formed to extend the shrouds from each other, and form the axis or middle line of the ship, so as to give greater security and support to the masts, as well as to prevent the shrouds from damaging the gunwale, or being injured by rubbing against it.

CHANT. See *Church Music*

CHAOS; according to the signification of the word, the void which embraces all things. Hesiod mentions, as the original principles of all things, Chaos, Earth, Tartarus, and Eros (Love); other ancient poets made Chaos alone the primeval source from which everything is derived; others added to it Night, Erebus, and Tartarus; and others still represented Chaos as the parent of the Earth and Heaven; after the production of which, Eros (Love) completed the creation. In later times, by *chaos* is understood the unformed primeval matter, of which every thing is made. Chaos, according to Hesiod, produced by and out of itself Erebus and Night, who, in turn, were the parents of Æther and Day.

CHAPEL HILL; a post-town in Orange county, North Carolina, near the head of New Hope creek, a branch of the Haw; lon. 79° 3′ W.; lat. 35° 40 N. It has an elevated and healthy situation, and contains about thirty houses. The surrounding country is hilly, abounding in springs, and the soil is not remarkably fertile. This is the seat of the university of North Carolina, which was incorporated in 1793; and degrees were first conferred in 1797. The college buildings consist of a chapel, two spacious edifices for the accommodation of students, all of brick, and a president's house. The funds consist of 30 or 40,000 dollars in bank stock, 50 or 60,000 acres of land, and all escheated property. There is a good chemical apparatus. The college library contains about 1800 volumes. The executive officers consist of a president, who is also professor of moral philosophy, and four professors, one of mathematics, one of chemistry, one of languages, and one of rhetoric; and two tutors.

CHAPELAIN, Jean, better known by an unsuccessful poem than many poets by successful ones, was born in Paris, Dec. 4, 1595. Marini, who went to Paris to have his *Adonis* printed there, induced him to write a preface to that poem, by which Chapelain attracted the notice of cardinal Richelieu. The latter, having the weakness to set up for a *bel esprit*, stood in need of a poet who would labour with him, and, at times, also, for him. Chapelain was possessed of talents and learning; he was obsequious and (which was the principal thing) discreet, and thus his fortune was made. He became one of the first members of the *Académie Française*, and was charged with the organization of that body. He received a large pension, and soon became the oracle of the French poets of that time. It would have been better, however, if he himself had not set up for a poet. His Maid of Orleans (*Pucelle*) was begun in 1630, and was, consequently, one of the first epic attempts in French literature. As it was announced twenty years before its publication, great expectations had been raised, which were by no means answered on its appearance (1656). In the first eighteen months, indeed, six editions were rapidly sold; but it soon became an object of ridicule with the modern French poets, and sunk into oblivion. As a man, Chapelain was universally esteemed. He died Feb. 22, 1674. The most complete edition of his *Pucelle* (eighteen books) appeared at Geneva in 1762. The royal

library in Paris contains all the twenty-four books in manuscript.

CHAPELLE (properly CLAUDE EMANUEL LULLIER); so called from La Chapelle, a village near Paris, where he was born in 1626; one of the most amiable and pleasing of the French poets. His lively and convivial disposition, his wit and talents, procured him the friendship of persons the most distinguished for rank and learning: among the latter were Racine, Boileau, Molière, Lafontaine, Bernier, &c. The productions of Chapelle bear the stamp of his characteristic ease, gayety, and wit. His description of a journey to Montpellier, *Relation d' un Voyage fait en France* (1662, 12mo), written jointly with Bachaumont, is a model of ease and pleasantry. He also wrote many songs, sonnets, and epistles. He possessed, in a remarkable degree, the talent of saying many witty things on a barren subject. He died in 1688.

CHAPLAIN properly signifies a person provided with a chapel, or who discharges the duties thereof. The name is applied to clergymen both in the Catholic and Protestant churches. The origin of the term is generally explained in the following manner: Bishop Martin (q. v.) is said to have worn a hood (*capa*) which was valued as possessing miraculous powers, and was, therefore, preserved, after his death, in a separate house, called, from this hood, *capella* (chapel), and the person stationed in the chapel to show it to pious spectators was termed *chaplain*. Charlemagne is said to have possessed St Martin's hood among his relics, and to have erected a chapel, called by the name of St Martin, in Germany, at the place where Furth afterwards arose. This emperor is also related to have built similar chapels at Nuremberg and Altenfurt. Another less probable derivation deduces the word, indeed, from *capella*, but explains it to signify the box in which the first missionaries carried the requisites for celebrating the Supper, who were thence denominated *chaplains*.

CHAPPE D'AUTEROCHE, JEAN, born in the year 1722, in Auvergne, took clerical orders, and devoted himself to the study of astronomy. In 1760, he was appointed by the academy to observe the transit (q. v.) of Venus over the sun's disk, at Tobolsk (June 6, 1761). He had the good fortune to find the sky clear and serene at the time when he wished to make his observations. After an absence of two years, he returned, and published a narrative of his travels. Besides much valuable information, it contains many unfavourable remarks on Russia, so that the empress Catharine II. herself wrote a reply to it, in a pamphlet, entitled *Antidote contre le Voyage de l'Abbé Chappe*. The same phenomenon, by which Chappe had been attracted to the north, prompted him, in 1769, at the suggestion of the academy, to undertake a voyage to California; but, before he could complete the object of his voyage, he died at St Lucar, Aug. 1, 1769. His observations on this voyage have been published by C. F. Cassini, under the title *Voyage de Californie* (Paris, 1772, 4to). They did not answer the expectations which had been entertained of them.

CHAPPE, CLAUDE, nephew of the above, was born in 1763. He is celebrated as the inventor of the telegraph, and attracted notice in his twentieth year, by several valuable essays in the *Journal de Physique*. Wishing to communicate with his friends, who lived at the distance of several miles from him, he conceived the idea of conversing with them by means of signals; and his experiments for this purpose led him to his important invention. Having succeeded in erecting his machine on a large scale, he laid a description of the work, which he called *telegraph*, before the national assembly, in 1792. The establishment of the first telegraphic line was ordered in 1793: the first event communicated by it was the capture of Condé. The convention, having received this news at the opening of a session, forthwith decreed that Condé should be called, in future, *Nordlibre*, and was apprized, in the same sitting, that the edict had been delivered and published to the army.* The method of interchanging messages by signals was known to the ancients, and has been used by navigators from time immemorial. The tactician Æneas mentions several attempts to express the letters of the alphabet at a distance by signals; and, towards the end of the eighteenth century, a trial of this kind was made by Amontons. The system of the former, however, admits of only a very limited application; a whole night being hardly sufficient to compose two or three words according to his method. Amontons, who is generally placed among the inventors of the telegraphic art, left no sketch of the machine contrived by him. The problem, therefore, still remained to be solved. The object was, to discover an expedient for conveying any information with despatch to any place and at any time. Chappe invented a machine, the signals of which are very distinct, while its motions are easy and simple. It may be erected at any place, defies every kind of weather, and, notwithstanding its simplicity, contains signs enough to convey any ideas, in such a way that not more than two signals are commonly necessary. The honour of this invention was contested by many persons. The chagrin which these disputes produced in the mind of Chappe threw him into a deep melancholy, and, in 1805, he put a period to his existence by precipitating himself into a well. His brother, Jean Joseph, became director of the telegraph in Paris.

CHAPTAL, JEAN ANTOINE CLAUDE, count of Chanteloup, peer of France, was born in 1756, and devoted himself to the study of medicine and the natural sciences. Having been long known as a distinguished physician, he rendered himself conspicuous as an adherent to the cause of the revolution, at the assault upon the citadel of Montpellier, in 1791. Being called to Paris, in 1793, on account of the scarcity of gunpowder, his chemical knowledge, and his activity in the enormous factory at Grenoble, enabled him to supply the necessary quantity, by the production of 3500 pounds every day. In 1794, he returned to Montpellier, received a place in the administration of the department of the Herault, and the professorship of chemistry, which had been founded there for him. In 1798, he was made a member of the Institute, favoured the revolution of the eighteenth Brumaire (q. v.), was appointed by the first consul, in 1799, counsellor of state, and, in 1800, minister of the interior, in which post he encouraged the study of all the arts, and established a chemical manufactory in the neighbourhood of Paris. In 1804, he fell into disgrace: the reason assigned is, that he refused to declare, in one of his reports, that sugar prepared from beets was better than that from the sugar-cane. In 1805, however, he was made, by the emperor, grand cross of the legion of honour, and member of the conservative senate. After the return of Napoleon from Elba, he was appointed director-general of commerce and manufactures, and minister of state. On the restoration of the king, he was obliged to retire to private life, and, at the same

* The telegraph at Liverpool communicated intelligence to that at Holy Head, 156 miles distant, and received an answer, the whole within the period of thirty-five seconds. This is supposed to be the quickest interchange of communication that ever took place. *Atlas* (London paper), Sept. 27, 1829.

time, to enter into negotiations with the princess of Orleans, relative to Chanteloup, which formerly had belonged to her. In March, 1816, the king nominated him a member of the academy of sciences. Chaptal's works on national industry, chemistry, the cultivation of the vine, &c., are very much esteemed; especially his *Chimie appliquée aux Arts* (Paris, 1807, 4 vols.); his *Chimie appliquée à l'Agriculture* (Paris, 1823, 2 vols.); and *De l'Industrie Française*, Paris, 1819, 2 vols.). He was director of two chemical manufactories, at Montpellier and Neuilly, discovered the application of old wool, instead of oil, in the preparation of soap, and the mode of dyeing cotton with Turkish red. He invented several kinds of cement and artificial Puzzolanas, by means of native calcined ochre, without the aid of foreign matters; new varnishes for earthen ware, without the use of lead ores and plumbago, &c., which are so often destructive of health and life; and extended the application of chemical agents to bleaching.

CHAPTER (from the Latin *caput*, head); one of the chief divisions of a book. As the rules and statutes of ecclesiastical establishments were arranged in chapters, so also the assembly of the members of a religious order, and of canons, was called a *chapter*, because some or all of the chapters, containing the rules, were read there; and the place where they assembled, as well as the reproof administered to a delinquent member, by reading the rules of the chapter transgressed, had the same name. The orders of knights, which originally had much of the ecclesiastical constitution, used this expression for the meetings of their members, and even some corporations of mechanics or tradesmen, call their assemblies *chapters*. In England, as elsewhere, the deans and chapters had the right to choose the bishop, but Henry VIII. assumed this right as a prerogative of the crown. In Prussia, also, Protestant bishops have been lately elected, and, still more lately, an archbishop, without the vote of a chapter, by a mere order of the government.

CHARACTER. This name is given to certain marks, used to signify objects or ideas. The written language of the Chinese is a language of figures, every object or notion being expressed in it by a particular figure. We, also, for the sake of brevity and precision, use, in several sciences, certain signs: for instance in:—

Astronomy.

☉ Sun,	♂ Mars,	♃ Jupiter,
☽ Moon,	⚵ Vesta,	♄ Saturn,
⊕ Earth,	⚷ Juno,	♅ Herschel.
☿ Mercury,	⚴ Pallas,	
♀ Venus,	⚳ Ceres,	
♈ Ram,	♌ Lion,	♐ Archer,
♉ Bull,	♍ Virgin,	♑ Capricorn,
♊ Twins,	♎ Balances,	♒ Waterman,
♋ Crab,	♏ Scorpion,	♓ Fishes.

Arithmetic, Algebra, and Geometry.

I	V	IX	C
II	VI	X	CC
III	VII	XX	D, IↃ
IV	VIII	L	M, CIↃ.

1 2 3 4 5 6 7 8 9 0.

+ and,	√ root,	∴ therefore,
— but,	°′ deg. min.	∾ like,
× into,	∟ angle,	≏ like & eq.
÷ by,	△ triangle,	∥ parallel,
= equal,	□ square,	> greater than,
∷ to, as, to	○ circle,	< less than.

Chemistry.

△ air,	☉ gold,	♂ iron,	⊖ salt,
▽ earth,	☽ silver,	⚹ tin,	⏃ sulphur,
▽ water,	☿ mercury,	♄ lead,	⏉ tartar.
△ fire,	♀ copper,	⊕ nitre,	

Dalton, has in modern times introduced a system of notation adapted to the atomic theory, of which the following is a specimen. Let ⊙ denote oxygen, ◑ hydrogen, ○ nitrogen, and ● carbon, then the atomic nature of their compounds may be shown thus—

⊙⊙ water,
⊙◑ ammonia,
⊙● ⊙ carbonic acid.

Formerly there were more signs and abbreviations used in scientific works than at present. In Prussia, the use of signs in medical prescriptions has been abolished from the danger of their being confounded.

CHARACTER MASKS; such as appear, not in dominos, but in the usual dress of certain ranks.

CHARADE; a syllabic enigma; that is, an enigma, the subject of which is a name or a word, that is proposed for discovery from an enigmatical description of its several syllables, taken separately, as so many individual words. A charade may be called complete, if the different enigmas which it contains are brought into a proper relation to each other, and, as a whole, unite in an epigrammatic point.

CHARCOAL. (See *Carbon*.) To the information contained in the article *Carbon*, we will only add a fact lately announced in the scientific journals, that, in Picardy, and other provinces of France, where turf is almost exclusively used as fuel, the inhabitants, by means of a cheap apparatus, are able to carbonize it so as to render it equal to the best charcoal.

CHARDIN, Jean, son of a Protestant jeweller in Paris, and a jeweller himself, was born in 1643. Before he had reached his twenty-second year, his father sent him to the East Indies, in order to buy diamonds. After a short residence in Surat, Chardin lived six years in Ispahan, where he was less engaged in mercantile business than in profound studies and scientific researches, making use of his connexions at court for collecting the most authentic information of the political and military state of Persia. He collected the most valuable materials relating to antiquities and history. In 1670, he returned to France. Finding, however, that he could hope for no employment on account of his religion, he again left France for Persia, in 1671, taking with him a considerable quantity of jewels, &c. He spent ten years partly in Persia and partly in India. In 1681, he arrived in London, when he received the honour of knighthood. He published the first volume of his travels, in London, in 1686. The other volumes were about to follow, when he was appointed minister plenipotentiary of the king of England to the states-general of Holland, and agent of the English East India company to the same. His new duties did not distract him from his favourite employment, so that, in 1711, two editions of his travels appeared. He soon after returned to England, where he died in 1713. The exactness and truth of his statements, and the extent of his knowledge, have been confirmed by all succeeding travellers. The best edition of Chardin's travels is that by Langlés, 1811, in ten vols. 8vo, with an atlas in folio.

CHARENTE; a river in France, rising in the department of the Upper Vienne. It falls into the sea about eight miles below Rochefort, opposite to the isle of Oleron, after a course of about 100 miles. It gives its name to a department. See *Departments*.

CHARENTON; a market-town about three leagues and a half from Paris, on the road to Troyes and Lyons, at the confluence of the Marne with the Seine. To its situation, Charenton, which is a very

busy and populous place, owes its numerous mercantile and manufacturing establishments. The bridge across the Marne must be considered as the key to Paris on this side; hence the memorable attacks upon it both in the civil wars of France, and in those with foreign enemies. In 865, the Normans made themselves masters of it, and destroyed it. In 1814, its possession was warmly contested. The students of the veterinary school at Alfort, in the neighbourhood, had solicited from the government permission to defend this post against the advancing troops of Wirtemberg and Austria. It was intrusted to them; but they were compelled to retire, after a heroic defence, before superior numbers. At Petit-Charenton is the celebrated hospital for the insane, where many unfortunate individuals, of both sexes (usually 4—500), are treated with great care, in order to effect their cure: those who are declared incurable are sent to Bicêtre. Here died, in 1813, Sade, the author of *Justine*, whom Napoleon, on account of this immoral and dangerous publication, had ordered to be treated as insane.

CHARETTE DE LA COUTRIE. See *Vendée.*

CHARGE D'AFFAIRES. See *Minister, Foreign.*

CHARIOT. The chariots of the ancients were strongly and even elegantly built, but were not well adapted for speed. Those of the Romans were named according to the number of horses used to draw them. Thus, a chariot with two horses was called a *Biga;* one with three, a *Triga;* one with four, a *Quadriga*, &c.

Biga.

Triga.

Quadriga.

The Romans always yoked their horses in their race-chariots abreast. It is recorded that Nero once drove a chariot at the Olympic games with no fewer than ten horses abreast.

CHARITY, brothers and sisters of. See *Fraternities.*

CHARKOW; capital of Slobodsk-Ukraine, in Russia, containing about 1500 houses, and nearly 15,000 inhabitants. It carries on considerable commerce, and four great fairs are held in the place every year. In 1803, the high school at Charkow was erected into a university, and several professors were invited thither from Germany. The emperor granted it an annual income of 130,000 paper rubles, and, in addition to this, a donation of 400,000 rubles was offered by the nobility of the country for its organization, of which sum, however, the greater part was yet unpaid in 1809. The number of professors is thirty-eight, and that of the students about 300; sixty of whom are supported at the emperor's expense. The latter are bound, after leaving the university, to teach, for six years, in the schools within the district of the university, and are pretty arbitrarily sent, by the university, to those places in which they are to be employed. The university possesses a library, and a cabinet for the natural sciences. Charkow also contains a gymnasium, a military academy, &c. A philotechnic society likewise holds its meetings there.

CHARLATAN (in Italian, *ciarlatano*); a mountebank, quack-doctor, empiric; hence every one who makes loud pretensions to knowledge or skill which he does not possess. The word is probably derived from the Italian *ciarlare* (to prate), because the chief art of a charlatan consists in boasting and idle talk. We find charlatans in all sciences, politics, religion, &c. Of the latter, Moliere says:—

> Aussi ne vois-je rien qui soit plus odieux
> Que les dehors plâtrés d'un zèle spécieux;
> Que ces francs charlatans, que ces dévots de place, &c.

How many political proclamations resemble, in charlatanism, the boasting placards of quacks, or the advertisements of new systems for teaching languages, &c., in a few hours!

CHARLEMAGNE (*Carolus Magnus*, Charles the Great); one of those characters whose achievements bear the impress of gigantic power, by whom nations have been formed and destroyed, and who have exercised an influence which has been felt for centuries, and compelled succeeding generations to admire their greatness, though unable to justify all their actions. Charlemagne, king of the Franks, and subsequently emperor of the West, was born in 742, in the castle of Carlsberg, on the lake of Wurmsee, in Upper Bavaria. Others mention the castle of Ingelheim, near Mentz, and others Aix-la-Chapelle, as the place of his nativity. His father was Pepin the Short, king of the Franks, son of Charles Martel. After the decease of his father, in 768, he was crowned king, and, according to the wish which Pepin had expressed, divided France with his younger brother Carloman; but the conditions of this partition were several times altered, without being ever adjusted to the satisfaction of the parties. Their mutual discontent was fostered principally by the king of the Lombards, Desiderius (the father-in-law of both princes), because Charlemagne had repudiated his wife. Desiderius sought revenge for the rejection of his daughter, by exciting and encouraging commotions in France, in which he was assisted by the circumstance that the nobles aspired to independence. The people of Aquitania were the first who attempted to become independent. Charlemagne marched against them with rather a small army; but he relied on the assistance of his brother Carloman, to whom a portion of Aquitania then belonged. Carloman appeared, indeed, in the field,

but, in the decisive moment, deserted his brother, who was obliged to sustain, alone, an unequal conflict. His great courage and conduct, after a long and doubtful contest, procured him the victory, in 770, and the insurgents submitted. In this campaign, the youthful hero displayed such distinguished military talents, that the fear of his name curbed his fiercest vassals. This contest convinced Charlemagne of the necessity of repressing the nobles, and employing them thenceforward in important enterprises, in order to divert their attention from the internal affairs of the empire. Had he not, therefore, himself been inclined to wars of conquest, in which his talents could be exhibited in all their splendour, he would have been induced to undertake them by the internal condition of the empire. At Carloman's death, in 771, and after the flight of his wife and her two sons to her father, in Italy, Charlemagne made himself master of the whole empire, the extent of which was already very great, as it embraced, besides France, a large part of Germany. He now formed the plan of conquering the Saxons, for, which his zeal for Christianity and its diffusion served him as a tolerable pretence. The Saxons, a nation of German heathens, were in possession of Holstein and Westphalia, between the rivers Weser and Elbe, and, like other barbarians, preferred pillaging to peaceful occupations, and a wandering to a settled mode of life. They had several leaders, and constituted various tribes, which were seldom disposed to co-operate. An invasion of the Saxons into the territory of the Franks was the alleged cause of the first war which Charlemagne began against them in 772. The other wars were produced by the rebellions of this warlike nation, which, overpowered, but not entirely vanquished, was never reduced to complete submission till the peace of Seltz, in 803, after it had embraced Christianity. A part of the Saxons Charlemagne removed to Flanders and Switzerland, and their seats were occupied by the Obotrites, a Vandal tribe in Mecklenburg. The famous pillars called *Irminsaule* were destroyed by Charlemagne, as monuments of pagan worship. Thus for thirty-two years did the Saxons resist a conqueror, who, at times indulgent to imprudence, often severe to cruelty, striving, with equal eagerness, to convert and to subdue them, never became master of their country till he had transformed it almost entirely into a desert. The Saxons might have made a more successful defence against the power and genius of Charlemagne, had they not been distracted by internal dissensions. The most celebrated of their leaders was Wittikind, and, next to him, Alboin, who finally embraced Christianity in 783. To explain the protracted resistance of the Saxons, we must remember that the manner in which the armies of those days were organized produced an armistice every year (the levy of troops being only for one campaign); that Charlemagne was obliged to wage wars at the same time against the Lombards, the Avars, the Saracens, and the Danes; and that the magnitude of his states facilitated the rebellions of his vassals, on which account all his attention was often required to preserve internal tranquillity, and maintain his own authority.

While he was combating the Saxons on the banks of the Weser, pope Adrian implored his assistance against Desiderius, who had torn from him the exarchate of Ravenna, which Pepin the Short had presented to the holy see, and who was urging the pope to crown the nephews of Charlemagne, that Charlemagne himself might be considered a usurper, and his subjects be induced to renounce their allegiance. The danger was urgent. Charlemagne immediately left Germany, and marched with his army to Italy. Desiderius fled to Pavia, which was bravely defended by the Lombards. The city finally fell, and Desiderius, with the widow and sons of Carloman, were carried prisoners to France. Desiderius ended his life in a monastery. Respecting the fate of the others, history is silent. In 774, Charlemagne was crowned king of Italy with the iron crown. Although the kingdom of Lombardy was now extinct, the provinces of which it consisted were allowed to retain their former laws and constitutions, it being a general maxim of the great monarch not to deprive the conquered nations of their usages and laws, nor to govern them all under one form. In this he followed the dictates of sound policy, which, in so turbulent times, led him to beware of consolidating all his vassals into a political body with equal rights, which might render a general combination against their ruler practicable.

In 778, he repaired to Spain, to assist a Moorish prince. He conquered Pampeluna, made himself master of the county of Barcelona, and spread the terror of his name everywhere. But, on his return, his troops were surprised in the valley of Roncesvalles by the Saracens, in connexion with the mountaineers (the Gascons), and suffered a severe defeat; remarkable from the circumstance, that Roland, one of the most famous warriors of those times, fell in the battle. (See *Chivalry.*) The disaffection of the tribes of Aquitania induced Charlemagne to give them a separate ruler: for this purpose he selected the youngest of his sons, Louis (called *le Débonnaire*). The Lombards were no less turbulent, and the Greeks made incessant efforts to reconquer Italy; and the nobles, to whom he had intrusted a part of the sovereignty of this country, evinced little fidelity. He therefore gave them his second son, Pepin, for a monarch; his eldest son, Charles, remaining constantly with him, and assisting him in his manifold undertakings. In 780, he caused these two sons to be crowned by the pope in Rome, hoping, by this means to render the royal dignity inviolable in the sight of the people. Charlemagne had another son, also called *Pepin,* who was the oldest of all his children, being the son of his divorced wife. This circumstance probably inspired the monarch with an aversion to Pepin, and prevented him from admitting him to participate in the government. Pepin, therefore, became the instigator of a conspiracy against his father, and finally died in a monastery.

After returning from Spain, Charlemagne was again obliged to take the field against the Saxons. Exasperated by the defeat of his generals in 782, he caused 4500 Saxons to be massacred at Verden—a measure which urged to fury the hatred of the people. The year 790, the twenty-second of his reign, was the only one which he passed without taking up arms. As his power increased, he meditated more seriously the accomplishment of the plan of his ancestor, Charles Martel, to restore the Western empire. To prevent the partition of the empire, the empress Irene, who then reigned at Constantinople, proposed to Charlemagne to marry their children, by which means the world would again have been united under one dominion. Her proposition was accepted; but Irene's ambition carried her so far, that she dethroned her own son, to render herself supreme and offered her own hand to Charlemagne, who did not seem averse to this singular union, which would have afforded the world an unparalleled spectacle, had not Irene herself been deposed. In the year 800, Charlemagne was crowned emperor of the West by pope Leo. III.; and, although his journey to Rome had, in all probability, no other object, he professed himself much surprised at this ceremony. On Christmas-day, he was proclaimed Cæsar and Augustus; he was invested with the ornaments of the ancient

Roman emperors, and the only thing forgotten was, that the empire could not subsist long in a family where the authority was, by law, divided among the children of the deceased monarch. After Charlemagne had made a monk of one of his sons, Pepin, king of Italy, died in 810, whose death was followed, the next year, by that of Charles, the oldest. Thus, of his legitimate sons, one only remained, Louis, king of Aquitania, whom he adopted as his colleague in 813, as his age and increasing weakness gave him warning that the end of his life could not be far distant. He died Jan. 28, 814, in the 71st year of his age and the 47th of his reign, with anticipations and fears that his empire would not long withstand the attacks of foreign enemies; apprehensions which the event confirmed. He felt, too late, that the same Saxons, part of whom he had driven from their seats, would one day take revenge on his empire, and in their train bring with them other barbarians. Charlemagne was buried at Aix-la-Chapelle, his favourite and usual place of residence. He was deposited in a vault, where he was placed on a throne of gold, in full imperial costume. On his head he wore the crown; in his hand he held a chalice; at his side was the sword; on his knees lay the book of the evangelists; at his feet his sceptre and shield. The sepulchre was sealed, and over it was erected a kind of triumphal arch, on which were the words "Here lies the body of Charles, the great and orthodox emperor, who gloriously enlarged, and for forty-seven years happily governed, the empire of the Franks."

Charlemagne was a friend of learning; he deserves the name of restorer of the sciences and teacher of his people. He attracted by his liberality, the most distinguished scholars to his court; among others, Alcuin, from England, whom he chose for his own instructor; Peter of Pisa, who received the title of his grammarian; and Paul Warnefried, better known under the name of *Paul Diaconus*, who gave the emperor instruction in Greek and Latin literature. By Alcuin's advice, Charlemagne established an academy in his palace at Aix-la-Chapelle, the sittings of which he attended, with all the scientific and literary men of his court—Leidrades, Theodulphus, the archbishops of Treves and Mentz, and the abbot of Corvey. All the members of this academy assumed names characteristic of their talents or inclinations. One was called *Damœtas*, another *Homer*, another *Candidus*; Charlemagne himself took the name of *David*. From Italy he invited teachers of the languages and mathematics, and established them in the principal cities of his empire. In the cathedrals and monasteries he founded schools of theology and the liberal sciences. He strove assiduously to cultivate his mind by intercourse with scholars; and, to the time of his death, this intercourse remained his favourite recreation. He spoke several languages readily, especially the Latin. He was less successful in writing, because he had not applied himself to it till he was further advanced in years. In the winter he read much, and even caused a person to read to him while he took his meals. He endeavoured to improve the liturgy and church music. He was desirous of introducing the Roman liturgy into his states; but the clergy, who clung to the ancient usages, offered some resistance. Several churches, however, complied with the wish of the monarch, and others mingled the Roman and Gallican liturgy. He attempted to introduce uniformity of measures and weights, but was unable to accomplish his design. Another great plan of his was to unite the Rhine with the Danube, and, consequently, the Atlantic with the Black sea, by means of a canal. The whole army was employed on the work; but its accomplishment was prevented by the want of that knowledge of hydraulic architecture which has been since acquired. The arts, however, under his patronage, produced other monuments of his fame. The city of Aix-la-Chapelle received its name from a splendid chapel, which he caused to be built of the most beautiful Italian marble. The doors of this temple were of bronze, and its dome bore a globe of massive gold. The imperial palace was built in the highest style of splendour. Charlemagne also erected baths, in which more than one hundred persons could swim in warm water. He was himself very fond of swimming, and frequently used these baths, with all the nobles of his court, and even with his soldiers. At Seltz, in Alsace, he had a no less splendid palace. To Charlemagne France is indebted for its first advances in navigation. He built the light-house at Boulogne, and constructed several ports. He encouraged agriculture, and made himself immortal by the wisdom of his laws. Thus his law *de villis* is esteemed a monument of his views on rural economy; and Menzel, in his history of the Germans, says of him, "His greatest praise is, that he prevented the total decline of the sciences in the West, and supplied new aliment to their expiring light; that he considered the improvement of nations as important as their union and subjugation. This love of intellectual improvement is the more laudable in a prince whose youth was spent in military exercises and the chase, and his whole after life in the whirlpool of war; at a time, too, before the charm of beautiful models had made intellectual occupation an enjoyment, but when literature and science, appearing in heavy forms, destitute of grace, deterred rather than invited. His fame filled even the East. He received ambassadors from the patriarch of Jerusalem, from the emperors Nicephorus and Michael, and was twice complimented with embassies from Haroun al Raschid, the famous caliph of Bagdad, all of which he received with a splendour unexampled even in the East. He convened councils and parliaments, published capitularies, wrote many letters (some of which are still extant), a grammar, and several Latin poems. His empire comprehended France, most of Catalonia, Navarre, and Arragon; the Netherlands, Germany as far as the Elbe, Saale, and Eyder, Upper and Middle Italy, Istria, and a part of Sclavonia.

In private life, Charlemagne was exceedingly amiable; a good father, and generous friend. His domestic economy afforded a model of frugality; his person, a rare example of simplicity and greatness. He despised extravagance of dress in men, though, on solemn occasions, he appeared in all the splendour of majesty. His table was very frugal. His only excess was his love of the other sex. He was large and strong; his height, according to Eginhard, equalled seven times the length of his foot. His head was round; his eye large and lively; his nose of more than common size; his countenance had an agreeable expression of serenity. His gait was firm; his bearing manly. He enjoyed constant health, till the last four years of his life, when he was attacked by fevers, and began to limp. In summer, he was accustomed to repose for two hours after dinner, for which purpose he used to undress; but at night he slept uneasily. He wore the dress of his country; on his body, a linen shirt, over which was a coat with a silk border, and long breeches. For his outer dress, he wore a cloak, and always his sword, the hilt and belt of which were of gold and silver. He possessed a a natural, impressive eloquence, and, in his expression of countenance, there was something to excite respect, united with gentleness and kindness. See *Eginhard*.

CHARLEMONT AND GIVET; one of the strongest fortresses in France, in the department of the Ardennes, with 3500 inhabitants. The works

occupy both banks of the Meuse, about twenty-five miles above Namur, at the junction of several roads, on a steep mountain. The two places completely command the river, and serve as a point of support to a friendly army, advancing along the Meuse, and as a serious obstruction if the forces belong to the enemy, obliging them to leave behind a corps of observation, at least double the number of that which composes the garrison. The castle and small town of Charlemont were built in 1555, by Charles V. Louis XIV., who had obtained possession of the place by the peace of Nimeguen, as it was capable of containing only two battalions, enlarged it by fortifying the small town of Givet, which lies at the foot of the hill, and by increasing the fortifications of Charlemont. At present, the place consists of four fortresses, two of which, Charlemont, and Great Givet, lie on the left bank of the Meuse, and the other two, Little Givet, and Mont d'Haur, upon the right. Charlemont rises from a narrow rock, which is two hundred feet high, commands almost every direction, descends perpendicularly towards the Meuse, and the west side, on the north, is very steep, and descends with a gentle slope on the east. This last side, the only one on which an attack can be apprehended, is defended by six bastions, a horn and a crown-work, and several detached works. Almost all the moats are hewn in the rock, and well provided with casemates. Great Givet has four bastions and three ravelins with dry ditches. Little Givet contains four bastions, and full ditches, but no covered way; and Mont d'Haur, a hill opposite to Charlemont, is included within the lines of the fortress by a strong crown-work, and may, at the same time, serve as a fortified camp. The fortress is calculated for a garrison of 11,000 men, but, in case of necessity, can contain 25,000, and may be defended by 3—4000 men. Though the two Givets and Mont d'Haur would not offer great obstacles to an attack, yet Charlemont is almost impregnable. It has never yet been seriously attacked. The Prussians, indeed, contemplated assailing it, in 1815, but abandoned the design, although the Givets and Mont d'Haur had already capitulated. By the treaty of Paris, it was occupied by a Russian garrison.

CHARLEROY, or CHARLES SUR SAMBRE; a town in the Netherlands, in Namur, on the north side of the river Sambre, in a place formerly called *Charnoy*; twenty miles E. N. E. Mons, twenty N. E. Maubeuge; lat. 50° 26′ N.; lon. 4° 32′ E.; population, 3744. It has manufactures of glass, hardware, and woollen stuffs, and in the neighbourhood are extensive pits of turf and coal. It was taken by the French, under general Valence, in the month of November, 1792, with 4000 prisoners. It was recovered by the Austrians, in the month of June, 1793, when the French were twice defeated; once with the loss of 4000 men, and again of 7000. July 25, 1794, it again surrendered to the French at discretion, with the garrison of 3000 men and sixty pieces of cannon.

CHARLES; the name of many important personages, whose lives are here given or referred to, in the following order:—

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For the sovereigns of this name not enumerated here, we refer the reader to the history of the countries to which they belong.

CHARLES MARTEL; a son of Pepin Heristel (mayor of the palace under the last kings of the Merovingian dynasty). His father had governed under the weak kings of France with so much justice, and so much to the satisfaction of the people, that he was enabled to make his office hereditary in his family. Chilperic II., king of the Franks, refusing to acknowledge Charles Martel as mayor of the palace, the latter deposed him, and set Clothaire IV. in his place. After the death of Clothaire, he restored Chilperic, and, subsequently, placed Thierri on the throne, showing how absolute was the control of the mayor, and that the royal dignity was a mere phantom. Charles Martel rendered his reign famous by the great victory which he gained, in October, 732, over the Saracens, near Tours, from which he acquired the name of *Martel*, signifying *hammer*. He died 741. His son Pepin the Short governed the Franks till the year 752, nominally under the effeminate king Childeric III.; but, in this year, pope Zachary replied to a question put to him by the states of France, that he ought to be king who had the royal power; in consequence of which the Franks declared Pepin king at Soissons, in 752. He died in 768, highly honoured by his subjects. His sons were Charlemagne and Charloman. See *Charlemagne*.

CHARLES IV., emperor of Germany, of the house of Luxemburg, was born in 1316, and educated at Paris. His father, John of Luxemburg, king of Bohemia, celebrated in history for his chivalric spirit, fell in the battle of Crecy. The quarrels of the emperor Louis the Bavarian with the king of Bohemia, the father of Charles, the choice of the latter, in the room of the emperor, excommunicated by Clement VI., and the victory which Louis, far his superior in power and talents, obtained over his rival, we have not room to relate. After the death of Louis, Oct. 21, 1347, Charles of Luxemburg, who inherited the kingdom of Bohemia, and had been chosen emperor in 1346, by five electors, hoped to occupy the imperial throne without opposition. But the very means which had raised him to the throne created him enemies. The princes of the empire regarded him as a servant of the pope. Ten years had not yet elapsed, since Germany, at the diet of Rense, had adopted the most energetic measures against the claims of the holy see. The election of Charles IV. was the first infringement of the celebrated constitution of 1338. In consequence, the archbishop of Mentz, whom Clement IV. had deposed, the electors of Brandenburg and the palatinate, the duke of Saxe Lauenburg, who arrogated a vote in the election, assembled at Lahnstein, declared the choice of Charles to be void, and elected Edward III. of England, brother-in-law of the last emperor; but this monarch, then at war with France, made use of the offer of the electors so far only as to secure the neutrality of the king of Bohemia, and rejected the proffered crown. Equally fruitless was the choice of Frederic the Severe, landgrave of Meissen; upon which the enemies of Charles elected the virtuous and heroic count Gunther of Schwarzburg, whom Charles, as some writers, though without sufficient authority, assert, put out of his way by poison. Those who surrounded Gunther in his last moments extorted from him an abdication, for which they were munificently paid by Charles, who was as liberal, when the gratification of his ambition was concerned, as he was unjust and rapacious in satisfying his avarice. Charles now used every effort to appease his enemies. He married the daughter of the elector of the palatinate, gave

the elector of Brandenburg Tyrol as a fief, and was unanimously elected emperor, and consecrated at Aix-la-Chapelle. But no sooner was he crowned, than he took possession of the imperial insignia, and, contrary to his express promise, conveyed them to Bohemia. He persuaded his father-in-law, the elector of the palatinate, to subject a great portion of the upper palatinate to the feudal court of Bohemia. This tribunal, which he regarded as the most proper instrument for the subjugation of Germany, was enlarged in its jurisdiction more and more. In 1354, the emperor went to Italy, to be crowned by the pope; but this favour he purchased on terms which made him an object of ridicule and contempt. He engaged to appear without any armed force. Having been consecrated, at Milan, king of Italy, he confirmed the Visconti in the possession of all the usurpations of which he had promised to deprive them. He also annulled all the acts of his grandfather, Henry VII., against Florence, and, by a treaty concluded at Padua, resigned the latter city, with Verona and Vicenza, to Venice. Trafficking thus with his rights, he went to Rome, and was crowned by a delegate of the pope, but did not dare to remain there a single day. He refused the request of some Romans, to claim the city, as belonging to him, in the name of the empire, and, in a treaty, renounced all sovereignty over Rome, the States of the Church, Ferrara, Naples, Sicily, Sardinia, and Corsica, and even took an oath not to return to Italy without the consent of the pope. Despised by the Guelphs, detested by the Ghibellines, Charles returned to Germany, where he issued the celebrated golden bull, which, till recently, continued a fundamental law of the German empire. (See *Bull.*) He thus acquired some claims to the public gratitude: but these were soon effaced by the general indignation, excited by the proposal made, with his consent, by the papal nuncio, to introduce a tax, equal to the tithe of all ecclesiastical revenues, for the benefit of the holy see. All the members of the diet opposed it; and Charles, in his anxiety to conciliate the princes of the empire, announced that he would propose to the assembly a reform of the German clergy. The pope, enraged at this proposal of the emperor, exhorted the electors to depose him. Charles immediately relapsed into his accustomed submissiveness, and not only abandoned all his reforms, but even confirmed, in 1359, all the privileges of the clergy, all their present and future possessions, and made them independent of the secular power. Such vacillating conduct subjected him to the contempt of both parties, of which he received a proof before the close of the same diet, which was held at Mentz. Several princes had, by degrees, obtained possession of many territories, formerly fiefs of the empire. Charles attempted to reunite them with the empire; but the dissatisfaction which was manifested at the attempt, frustrated this plan of the weak emperor, who indemnified himself by selling to the king of Poland the rights of sovereignty, which had been hitherto exercised by the German emperors, over some of his provinces. It may be easily supposed that, under such an emperor, Germany did not enjoy internal tranquillity. Bands of robbers plundered the country in all quarters. The emperor marched against them without accomplishing any thing, and, finally, left the princes and cities to protect themselves by mutual alliances, as well as they were able. The state of Italy was no less melancholy. Tuscany was suffering the evils of anarchy; Lombardy was distracted by civil wars, and the Visconti had made themselves masters of the Milanese. The emperor, true to his principle of sanctioning power wherever found, appointed these usurpers his vicars-general in Lombardy. Inboldened by this, Barnabas Visconti threatened to subject all Italy to his yoke. Pope Urban V. sent an invitation to Charles to concert measures of resistance with him, hastened from Avignon to Rome, concluded several alliances, levied troops, and waited for the emperor, who actually appeared with a considerable force; so that Italy, for a short time, deemed itself safe. Charles took advantage of the pope's situation to persuade him to crown his fourth wife, Elizabeth of Pomerania, at Rome, and, in return, entered into the most positive engagements with Urban. Notwithstanding this, he again engaged in negotiations with the Visconti, and sold them a formal confirmation of all their usurpations. In like manner, during his residence in Italy, he sold states and cities to the highest bidder, or, if they themselves offered most, made them independent republics. With great treasures, but despised by his enemies, and hated by his allies, he returned to Germany. Gregory XI., having given his consent that his son Wenceslaus should be elected king of the Romans,* he employed his ill-gotten wealth to purchase the votes of the electors, who were irritated at the conduct of the pope, and distributed among them, in addition, the domains of the empire on the Rhine, and several free imperial cities. Thus he attained his object. To maintain their rights against the arbitrary measures of the emperor, the imperial cities in Suabia formed the (so called) *Suabian league*, which Charles opposed in vain. To the pope he manifested his gratitude by extending the privileges of the clergy. The empire was nearly ruined, when Charles died at Prague, in 1378. To his eldest son, Wenceslaus, he left Bohemia and Silesia; to the second, Sigismund, the electorate of Brandenburg; and to the third, Lusatia. His reign is remarkable for the improvement and prosperity of Bohemia; for the founding of the universities of Prague and Vienna; for a terrible persecution of the Jews, and as the period when the sale of letters of nobility commenced in Germany. The history of this prince affords a fine illustration of the soundness of the theory of legitimacy many of his usurpations having become a part of the "divine right" of succeeding rulers.

CHARLES V., emperor of Germany and king of Spain (in the latter capacity, he is called *Charles I.*), the eldest son of Philip, archduke of Austria, and of Joanna, the daughter of Ferdinand and Isabella of Spain, was born at Ghent, Feb. 24, 1500. Philip was the son of the emperor Maximilian and Mary, daughter of Charles the Bold, last duke of Burgundy. Charles's birth gave him claims to the fairest countries of Europe. He was educated in the Netherlands, under the care of William of Croy, lord of Chièvres. Charles preferred military exercises to study. Chièvres, without diverting him from his favourite occupations, taught him history, formed him for affairs of state, and implanted in him that gravity which he retained through life. After the death of Ferdinand, his grandfather, in 1516, Charles assumed the title of *king of Spain*. The management of this kingdom was intrusted to the celebrated cardinal Ximenes, who, by his genius, prepared the way for the glorious reign of Charles V. In 1519, Maximilian likewise died, and Charles was now elected *emperor*. He left Spain to take possession of his new dignity, for which he had to contend with Francis I., king of France. His coronation took place at Aix-la-Chapelle, with extraordinary splendour. The elective capitulation (*Wahlcapitulation*, see *Capitulation*), signed by his ambassadors, he ratified without hesitation.

* This was the title given to the person elected during the lifetime of the emperor, to succeed him after his death.

The chief features of it were the reservations made by the electors, securing themselves against foreign influence. The emperor was not to begin any war without their consent; no language but the German or Latin was to be used in the administration of the affairs of the empire; and the rich commercial confederacies of merchants, whose wealth, as the instrument expressed it, had enabled them to act according to their own will, were to be abolished by the emperor, assisted by the advice of the members of the empire. The association aimed at was the powerful Hanseatic league, whose influence had excited the electors' jealousy. The progress of the reformation in Germany demanded the care of the new emperor, who held a diet at Worms. Luther, who appeared at this diet, with a safe conduct from Charles, defended his cause with energy and boldness. The emperor kept silent; but, after Luther's departure, a severe edict appeared against him, in the name of Charles, who thought it for his advantage to show himself the defender of the Roman church. The claims which Francis I. had advanced to the empire, and those which he still preferred to Italy, the Netherlands, and Navarre, made war appear inevitable. Charles prepared for it by an alliance with the pope. Hostilities broke out in 1521. The French, victorious beyond the Pyrenees, were unsuccessful in the Netherlands. A congress held at Calais only increased the irritation, and gave Henry VIII., king of England, a pretext for declaring himself for Charles, whose party daily acquired strength. A serious insurrection in Spain was happily subdued. The defeat of Bonnivet, in the Milanese, and the accession of the constable of Bourbon, indemnified Charles V. for his want of success in Provence. Francis, who was besieging Pavia, was defeated by the imperial forces, and taken prisoner, in 1525. On this occasion, Charles feigned the moderation of a Christian hero. Without improving his advantages, he remained inactive in Spain. But he thought to attain his object in another way. He proposed to Francis I. such hard conditions, that this unfortunate prince swore that he would die in captivity, rather than accede to them. Meanwhile, he was carried to Spain, and treated with respect. Charles, however, did not visit him, until he was informed that the life of his prisoner was in danger. The interview was brief. Charles promised his captive a speedy release. The treaty of Madrid was finally concluded in January, 1526.

The power of Charles now became a source of uneasiness to most other princes of Europe. Pope Clement VII. placed himself at the head of a league of the principal states of Italy against the emperor; but their ill-directed efforts were productive of new misfortunes. Rome was taken by storm by the troops of the constable, sacked, and the pope himself made prisoner. Charles V. publicly disavowed the proceedings of the constable, went into mourning with his court, and carried his hypocrisy so far as to order prayers for the deliverance of the pope. On restoring the holy father to liberty, he demanded a ransom of 400,000 crowns of gold, but was satisfied with a quarter of that sum. He also released, for 2,000,000, the French princes, who had been given to him as hostages. Henry VIII. of England now allied himself with the French monarch against Charles, who accused Francis of having broken his word, given on the honour of a gentleman. The quarrel brought on a challenge to a duel, which did not, however, take place. The war was terminated in 1529, by the treaty of Cambray, of which the conditions were favourable to the emperor. Charles soon after left Spain, and was crowned in Bologna as king of Lombardy and Roman emperor. On the occasion of this solemnity, the proud Charles kissed the feet of the same pope who had been his prisoner. In 1530, he seemed desirous, at the diet of Augsburg, to reconcile the various parties; but, not succeeding, he issued a decree against the Protestants, which they met by the Smalcaldic league. He also published, in 1532, a law of criminal procedure. (See *Carolina*.) Notwithstanding his undertakings in favour of the Catholic religion, Charles always showed himself moderate towards the Protestants, whenever his interest left room for toleration. Nor did the Protestant princes hesitate to furnish their contingents, when he was assembling an army against the Turks. Having compelled Solyman to retreat, he undertook, in 1535, an expedition against Tunis, reinstated the dey, and released 20,000 Christian slaves. This success added to his character somewhat of the chivalric, which gave him still more influence in Christendom, and promoted his political projects. He manifested this chivalrous spirit still more in a speech, which he made at Rome, before the pope and cardinals, when hostilities were renewed in Italy against France. In this he proposed a duel, in which the duchy of Burgundy on the one part, and the duchy of Milan on the other, were to be the prize; but, on the following day, he expressed himself in such a manner to the French ambassador, that it was suspected that his challenge was only a figure of speech. His invasions of Provence and Picardy met with small success. A truce was concluded in 1537, and, in 1538, prolonged for ten years. The two monarchs had an interview, in which they spoke only of mutual respect and esteem. Soon after, Charles, who was in Spain, where he had annihilated the old constitution of the cortes, wished to pass through France to the Netherlands. He spent six days with Francis I. in Paris where the two princes appeared together in all public places like brothers. Courtiers were not wanting, who advised the king of France to detain his guest, until he had annulled the treaty of Madrid; but Francis was satisfied with promises, which Charles very soon forgot. Having quelled the disturbances in the Netherlands, Charles resolved, in 1541, to crown his reputation by the conquest of Algiers. Against Doria's advice, he embarked in the stormy season, and lost a part of his fleet and army, without gaining any advantage. After his return, his refusal to invest the king of France with the territory of Milan involved him in a new war, in which the king of England embraced his part. The army of Charles was defeated at Cerisola; but, on the other hand, he penetrated to the heart of Champagne. The disturbances caused in Germany by the reformation induced the emperor to accede to the peace of Crespy, in 1545.

The policy of Charles was to reconcile the two parties, and, towards the Protestants, he employed alternately threats and promises. After some show of negotiation, the Protestant princes raised the standard of war. The emperor declared, in 1546, the heads of the league under the ban of the empire, excited divisions among the confederates, collected an army in haste, and obtained several advantages over his enemies. John Frederic, the elector of Saxony, was taken prisoner in the battle of Muhlberg, in 1547. Charles received him sternly, and gave him over to a court-martial, consisting of Italians and Spaniards, under the presidency of Alva, which condemned him to death. The elector saved his life only by renouncing his electorate and his hereditary estates; but he remained a prisoner. Meanwhile, the emperor appeared somewhat more moderately inclined towards the vanquished party. On coming to Wittenberg, he expressed surprise that the exercise of the Lutheran worship had been discontinued. He visited the

grave of Luther, and said, "I do not war with the dead: let him rest in peace: he is already before his Judge." The landgrave of Hesse Cassel, one of the heads of the Protestants, was compelled to sue for mercy: notwithstanding his promise, Charles deprived him of his freedom. After having dissolved the league of Smalcalden, the emperor again occupied himself with the plan of uniting all religious parties, and, for this purpose, issued the *Interim* (q. v.), so called, which was as fruitless as the measures proposed by him at the diet of Augsburg. Neither was he successful in securing the imperial crown to his son. Discord still agitated public sentiment, and a new war broke out against him. Maurice of Saxony, whom he had invested with the electoral dignity, formed a league, which was joined by Henry II., king of France, the successor of Francis. The preparations had been made with the greatest secrecy. Charles was at Inspruck, superintending the deliberations of the council of Trent, and meditating great plans against France and Turkey. He was expecting the aid of Maurice, when this prince threw off the mask, appeared suddenly at the head of an army, and invaded the Tyrol in 1552, while Henry II. entered Lorraine. Charles was near being surprised in Inspruck, in the middle of a stormy night. Tormented by the gout, he escaped alone, in a litter, by difficult roads. Maurice abandoned the imperial castle to plunder, the council of Trent was dissolved, and the Protestants dictated the conditions of the treaty of Passau, in 1552. Charles was not more successful in Lorraine. He was unable to recover Metz, defended by the duke of Guise. In Italy, he lost Sienna, by a revolt. He withdrew to Brussels, where, hard pressed by his enemies, and suffering from the gout, he became gloomy and dejected, and, for several months, concealed himself from the sight of every one, so that the report of his death was spread through Europe. His last exertions were directed against France, which constantly repelled his assaults. The diet of Augsburg, in 1555, confirmed the treaty of Passau, and gave the Protestants equal rights with the Catholics.

Charles saw all his plans frustrated, and the number of his enemies increasing. He resolved to transfer his hereditary states to his son Philip. Having convened the estates of the Low countries at Louvain, in 1555, he explained to them the reasons of his resolution, asserted that he had sacrificed himself for the interests of religion and of his subjects, but that his strength was inadequate to further exertion, and that he should devote to God the remainder of his days. He then turned to Philip, who had thrown himself on his knees, and kissed the hand of his father; reminded him of his duties, and made him swear to labour incessantly for the good of the people. He then gave him his blessing, embraced him, and sunk back exhausted on his chair. At that time, Charles conferred on Philip the sovereignty of the Netherlands alone. Jan. 15, 1556, he conferred upon him, in like manner, the Spanish throne, reserving for himself merely a pension of 100,000 ducats. The remaining time that he spent in the Netherlands, he employed in reconciling his son with France, and effected the conclusion of a truce. Having made an unsuccessful attempt to induce his brother Ferdinand to transfer the imperial crown to the head of his son, he sent a solemn embassy to Germany, to announce to the electors his abdication; after which he embarked at Zealand, and landed on the coast of Biscay. It is said that he threw himself on the earth on landing, kissed it, and exclaimed, "Naked I left the womb of my mother, and naked I return to thee, thou common mother of mankind." He had selected for his residence the monastery of St Justus, near Placensia, in Estremadura, and here he exchanged sovereignty, dominion, and pomp, for the quiet and solitude of a cloister. His amusements were confined to short rides, to the cultivation of a garden, and to mechanical labours. It is said that he made wooden clocks, and, being unable to make two clocks go exactly alike, was reminded of the folly of his efforts to bring a number of men to the same sentiments. He attended religious services twice every day, read books of devotion, and, by degrees, fell into such dejection, that his faculties seemed to suffer from it. He renounced the most innocent pleasures, and observed the rules of the monastic life in all their rigour. In order to perform an extraordinary act of piety, he resolved to celebrate his own obsequies. Wrapped in a shroud, and surrounded by his retinue, he laid himself in a coffin, which was placed in the middle of the church. The funeral service was performed, and the monarch mingled his voice with those of the clergy, who prayed for him. After the last sprinkling, all withdrew, and the doors were closed. He remained some time in the coffin, then rose, threw himself before the altar, and returned to his cell, where he spent the night in deep meditation. This ceremony hastened his death. He was attacked by a fever, of which he died, at the age of fifty-nine years, Sept. 21, 1558.

Charles had a noble air, and refined manners. He spoke little, and smiled seldom. Firm of purpose; slow to decide; prompt to execute; equally rich in resources, and sagacious in the choice of them; gifted with a cool judgment, and always master of himself, he steadily pursued his purposes, and easily triumphed over obstacles. Circumstances developed his genius, and made him great. Although his want of faith was notorious, he imposed, by the semblance of magnanimity and sincerity, even on those who had already experienced his perfidy. An acute judge of men, he knew how to use them for his purposes. It is improbable that it was his intention to establish a universal monarchy. In misfortune he appears greater than in prosperity. He protected and encouraged the arts and sciences, and is said to have picked up a brush, which had fallen from the hand of Titian, with the words, "Titian is worthy of being served by an emperor." By his wife Eleonora daughter of Emanuel, king of Portugal, he had one son, afterwards Philip II., and two daughters. He had, also, several natural children.—Charles V. is one of the most remarkable characters in history. He exhibited no talents in his youth, and, in after life, when his armies in Italy were winning battle after battle, he remained quietly in Spain, apparently not much interested in these victories; but, even in his early youth, his motto was, *not yet* (*nondum.*) It was not till his thirtieth year, that he showed himself active and independent; but, from this time to his abdication, he was, throughout, a monarch. No minister had a marked influence over him. He was indefatigable in business, weighing the reasons on both sides of every case with great minuteness; very slow in deciding; unchangeable of purpose; so that he once said to a courtier, who praised him for his perseverance and firmness, that he sometimes insisted upon things not right. Granvella was the only person who possessed his entire confidence. (See *Granvella.*) Wherever he was, he imitated the customs of the country, and won the favour of every people except the Germans. Among them he was not liked, owing to his want of the frankness which they expected in their emperor. Charles was slow in punishing, as well as in rewarding; but, when he did punish, it was with severity; when he rewarded, it was with munificence. His health early declined. In his fortieth year, he felt himself weak. His suf-

ferings from the gout were extreme: he could not even open a letter without pain. After his mother's death, he thought sometimes that he heard her voice, calling to him to follow her. It is said that, when arming for battle, he trembled; but, in the heat of the engagement, was as cool as if it were impossible for an emperor to be killed. We know of no work, in which the character of Charles has been delineated with more truth than in the valuable production of Mr Ranke, professor in the university of Berlin.—The Princes and Nations of the South of Europe in the sixteenth and seventeenth centuries (Hamburg, 1827). Among the numerous sources of the history of Charles V., we would mention Hormayr's *Aus durchaus ungedruckten Papieren*, in his *Archiv. fur Geogr. Historie*, &c. (Jahrg. 1810). The work of Robertson is too well known to need recommendation.

CHARLES VI., the second son of the emperor Leopold I., was born Oct. 1, 1685. His father destined him for the Spanish throne. The last prince of the house of Hapsburg, Charles II., disregarding the house of Austria, whose right to the Spanish throne was undoubted, according to the law of inheritance by descent, had, by his will, made Philip, duke of Anjou, second grandson of Louis XIV., heir of the Spanish monarchy, and, after the death of Charles II., Nov. 1, 1700, Philip had taken possession of the vacant kingdom. England and Holland united against him, and this alliance was soon joined by the German empire, Portugal, and Savoy. Charles was proclaimed king of Spain, at Vienna, in 1703, and proceeded, by way of Holland, to England, from whence, in January, 1704, he set sail, with 12,000 men, for Spain, which was almost wholly occupied by the French, and landed in Catalonia. He succeeded in making himself master of Barcelona; but he was soon besieged there by his rival Philip V. The French had already taken Mont Jouy, preparations were making for an assault on the city, and it seemed as if Charles could not escape being captured. Nevertheless, at the head of a garrison of hardly 2000 men, he made the most obstinate resistance, till the long-expected English fleet appeared, which put to flight the twelve French ships that blockaded the harbour, and landed a body of troops, which compelled the French speedily to raise the siege. This event was followed by alternate reverses and successes. Twice Charles reached Madrid, and twice was he driven from the city. The first time, in 1706, he caused himself to be proclaimed king, in the capital, under the name of *Charles III.* He had been a second time compelled to flee to the walls of Barcelona, when he was informed of the death of his brother Joseph I. According to the will of Leopold, this event placed the double crown of Charles V. on his head; to his claims on Spain, it added the more certain possession of the Austrian dominions. But the allies were averse to seeing so much power united in the same hands. Charles repaired to Germany by way of Italy, and, on his arrival, learned that, at Eugene's suggestion, he had also been elected emperor. His coronation took place at Frankfort, in December, 1711; and, in the following year, he received, at Presburg, the crown of Hungary. At the same time, he still retained the empty title of king of Spain. He now prosecuted, under the conduct of Eugene, the Spanish war of succession, which his brother had carried on with so much success in the Netherlands; but Marlborough's disgrace, and the retreat of the English army, having resulted in a defeat at Denain, the allies concluded a peace with France at Utrecht, in 1713, in spite of all the efforts of the emperor to prevent it. He was obliged, in the following year, to sign the treaty of Rastadt. This treaty secured him in the possession of Milan, Mantua, Sardinia, and the Netherlands. Soon after, in June, 1715, the Turks declared war against Venice. The emperor undertook the defence of this republic. His brave armies, led by Eugene, achieved decisive victories at Peterwardein and Belgrade. But, as the Spaniards menaced Italy, Charles concluded, in 1718, the peace of Passarowicz, by which he obtained Belgrade, the north of Servia, and Temeswar. Cardinal Alberoni, who was at the head of the cabinet of Madrid, involved Austria, by his schemes, in a new war. But the quadruple alliance, concluded at London in 1718, terminated the war with the removal of this minister, in 1720. To secure his dominions to his daughter Maria Theresa, in default of male heirs, Charles strove to induce the various powers to guarantee the pragmatic sanction, which settled the succession in her favour. He succeeded, by degrees, in gaining the concurrence of all the European powers. The emperor availed himself of a short period of peace to establish various institutions for the benefit of commerce. He visited, in person, the coasts of Istria, where he caused roads and harbours to be constructed, and vessels to be built. His plans respecting the Indian trade in the Netherlands had not the same success, and he was compelled to sacrifice them to the pretensions of the maritime powers. The reign of this prince, by nature a lover of peace, was marked with perpetual agitations. The succession to the Polish throne, after the death of Augustus II., in 1733, disturbed the peace of Europe. Charles, with Russia, supported the son of this prince; but France and Spain declared themselves for Stanislaus Leczinsky. From this arose a bloody war, which terminated, in 1735, in the loss of the Two Sicilies and a part of the duchy of Milan. Austria received Tuscany in exchange for Lorraine, and obtained Parma. Hardly had Charles finished this war, when his alliance with Russia involved him anew in a war with the Turks. In 1737, his troops, under field-marshal Seckendorf, invaded Servia, without any declaration of war, and occupied Nissa. But the Turks renewed their attacks with a continually augmented force, and obliged the emperor, after three unsuccessful campaigns, to cede to them, by the peace of Belgrade, in 1739, Walachia, and the Austrian part of Servia, with Belgrade. Charles died Oct. 20, 1740, at a time when he was employed in the improvement of his distracted finances, and was about putting the last hand to the pragmatic sanction, by causing the grand-duke of Tuscany, his son-in-law, to be chosen king of the Romans.

CHARLES VII. (properly *Charles Albert*), king of the Romans, born at Brussels, in the year 1697, was the son of Maximilian Emanuel, elector of Bavaria, then governor of the Spanish Netherlands. His youth was spent at the imperial court, and, in the war against the Turks, he commanded the army of auxiliaries sent by his father. In 1722, he married the daughter of Joseph I., having previously renounced all rights which this marriage might give him to the succession to the throne of Austria. In 1726, he succeeded his father as elector of Bavaria. He was one of the princes who protested against the pragmatic sanction, guaranteed, in 1732, by the diet of Ratisbon, and, in consequence, concluded a defensive alliance with Saxony. After the death of Charles VI. (q. v.), in 1740, he refused to acknowledge Maria Theresa as his heiress, founding his own claims to the succession on a testament of Ferdinand I. He was supported by the king of France, with a considerable force. In 1741, he was recognized, at Lintz, as archduke of Austria. The obstacles thrown in his way by cardinal Fleury, who

wished not to dismember the Austrian monarchy, as well as the want of artillery and ammunition, prevented him from getting possession of Vienna. On the other hand, he took Prague, where he was crowned and proclaimed king of Bohemia. In 1742, he was unanimously elected king of the Romans: he made a solemn entry into Frankfort, and was crowned by his brother, the elector of Cologne. But fortune soon deserted him. The armies of Maria Theresa reconquered all Upper Austria, and overwhelmed Bavaria. It was necessary to abandon Bohemia. Charles fled to Frankfort, and convoked a diet, when an attack of the king of Prussia on Maria Theresa allowed him to return to Munich in 1744, in which city he died in January, 1745, exhausted by grief and disease. He was succeeded in the electorate by his son Maximilian Joseph, in the imperial dignity by Francis I., husband of Maria Theresa.

CHARLES THE BOLD, duke of Burgundy, son of Philip the Good and Isabella of Portugal, born at Dijon, Nov. 10, 1433, at first bore the name of *count of Charolais*, under which he distinguished himself in the battles of Rupelmonde, in 1452, and of Morbeque, in 1453. He was of a violent, impetuous disposition, sometimes breaking out into fury; and early displayed that unhappy ambition, which was the source of his errors and misfortunes. His dislike of the lords of the house of Croy, the favourites of his father, was insurmountable; and, being unable to procure their disgrace, he withdrew from the court, and went to Holland. He was again reconciled, however, with his father, whom he inspired with his own hatred of Louis XI., and placed himself at the head of the party then forming against that monarch. Having passed through Flanders and Artois, he crossed the Somme at the head of 26,000 men, and appeared before Paris. The king sent the bishop of the city, Alain Chartier, to reproach him for waging war against his sovereign. But the heir of Burgundy answered, "Tell your master, that against a prince who makes use of the dagger and poison, there are always sufficient grounds of war, and that, in marching against him, one is very sure of finding, on their way, companions enough. Moreover, I have taken up arms solely at the urgent request of the people, nobility, and princes: these are my accomplices!" Louis met him at Montlheri. Charles broke through one wing of the royal army, and allowed himself to be carried on too far in pursuit of the fugitives. Surrounded by fifteen *gens d'armes*, who had already killed his master of the horse, he received a wound, but refused to surrender; performed prodigies of valour, and thus gave his soldiers time to come to his release. From this time, Charles conceived so high an opinion of his talents for war, that the greatest reverses could not cure him of it. He succeeded his father in 1467, and immediately engaged in a war with the citizens of Liege, whom he conquered and treated with extreme severity. Before this undertaking, he had been obliged to restore to the citizens of Ghent the privileges which had been taken from them by Philip the Good. He now revoked his forced concessions, caused the leaders of the insurrection to be executed, and imposed a large fine on the city. In 1468, he married Margaret of York, sister of the king of England, and resolved immediately to renew the civil war in France; but Louis disarmed him by giving him 120,000 crowns of gold. October 3d of the same year, the monarch and the duke had a meeting at Peronne, in order to adjust their differences. There the duke learned that the inhabitants of Liege, instigated by the king, had rebelled anew, and made themselves masters of Tongres. Charles was enraged. In vain did Louis on oath protest his innocence; he was imprisoned and strictly guarded. After hesitating long between the most violent measures, the duke finally compelled the king to sign a treaty, the most disgraceful condition of which was, that he should march with Charles against the city of Liege, which he had himself excited against the duke. Charles encamped before Liege, in company with the king: the city was taken by storm, and abandoned to the fury of the soldiers. Such success rendered the mind of the duke utterly obdurate, and added the last traits of that inflexible, sanguinary character, which made him the scourge of his neighbours, and led to his own destruction. Edward IV. conferred on him, in 1470, the order of the garter. Shortly after, he received, in Flanders, Edward himself, who came to seek an asylum with the duke. Charles gave him money and ships to return to England.

About the end of the same year, the war between the king of France and the duke of Burgundy was renewed; and never did Charles show himself more deserving of the name of the *Bold*, or *Rash*, than in this war. Forced to sue for a truce, he nevertheless soon took up arms anew, accused the king, publicly, of magic and poisoning, and, at the head of 24,000 men, crossed the Somme. He took the city of Nesle by storm, caused fire to be set to it, and, as he saw it burning, said, with barbarous coolness, "Such are the fruits of the tree of war." An enemy to tranquillity, insensible to pleasure, loving nothing but destruction and bloodshed, and, notwithstanding his pride, master of the art of procuring allies, Charles, who desired to be equal to Louis XI. in dignity and rank, as well as in power, formed the plan of enlarging his dominions on the Rhine, and elevating his states into a kingdom, under the name of *Belgic Gaul*. He visited the emperor Frederic III., at Treves, to obtain the title of king and vicar-general of the empire, which the emperor had promised him, on condition that he should marry his daughter to the archduke; but, as neither would enter first into obligations, they separated in dissatisfaction, and the negotiation was broken off.

Louis, meanwhile, involved Charles in greater embarrassments, by exciting against him Austria and the Swiss. Charles now determined to dethrone him, and, for this purpose, made an alliance with the king of England; but, being compelled to hasten to the aid of his relative, the bishop of Cologne, he lost ten months before Neuss, which he besieged in vain, and then hastened to Lorraine, to take revenge on the duke Rene, who, at the instigation of France, had declared war against him. Having completed the conquest of Lorraine by the taking of Nancy, in 1475, he turned his arms against the Swiss; and, notwithstanding the representations of these peaceful mountaineers, who told him that all that he could find among them would not be worth so much as the spurs of his horsemen, he took the city of Granson, and put to the sword 800 men, by whom it was defended. But these cruelties were soon avenged by the signal victory which the Swiss obtained near the same city, March 3, 1476. The loss of this battle plunged Charles into a gloomy dejection, which disturbed his mind and his health. With a new army, he returned to Switzerland, and lost the battle of Murten (Morat), June 22d. The duke of Lorraine, who had fought in the army of the Swiss, led the victors to the walls of Nancy, which surrendered Oct. 6th. At the first information of this siege, Charles marched to Lorraine, to retake the city of Nancy from the duke René. He intrusted to the count of Campo-Basso the charge of the first attack, and, on learning that this officer was a traitor, he regarded the information as a snare. Campo-Basso protracted the siege, and

gave René time to come up with 20,000 men. On the approach of this army, he deserted, with his troops, to the enemy, so that the army of Charles now consisted of only 4000 men. Against the advice of his council, Charles persisted in risking battle with unequal forces. On the 5th or 6th Jan., 1477 (John von Muller himself is in doubt respecting the day), the two armies met: the wing of the Burgundian was broken through and dispersed, and the centre, commanded by the duke in person, was attacked in front and flank. As Charles was putting on his helmet, the gilded lion, which served for a crest, fell to the ground, and he exclaimed, with surprise, "*Ecce magnum signum Dei!*" Defeated, and carried along with the current of fugitives, he fell, with his horse, into a ditch, where he was killed by the thrust of a lance, in the forty-fourth year of his age. His body, covered with blood and mire, and with the head imbedded in the ice, was not found till two days after the battle, when it was so disfigured that for some time his own brothers did not recognize it. He was finally known by the length of his beard and nails (which he had suffered to grow since his defeat at Morat), as well as by the scar of a sword-cut, which he had received in the battle of Montlheri. With this prince expired the feudal government in Burgundy.

Charles was not without good qualities. In the government of his people, we find no traces of the severity with which he treated himself, and his disposition made him attentive to the administration of justice. He was buried at Nancy, at the command of the duke of Lorraine. In 1550, Charles V., his great-grandson, caused his remains to be conveyed to Bruges. He was married three times, but left only one daughter, Maria, heiress of Burgundy, by Isabella of Bourbon, his second wife. (See *Maximilian I.*)—Compare the work of the baron de Barante, peer of France, *Hist. des Ducs de Bourgogne de la Maison de Valois* (Paris, 1824, 10 vols). In Quentin Durward, Sir Walter Scott has described the character of Charles, and some of the quarrels between him and Louis of France.

CHARLES VII., king of France. See *France*, and *Joan of Arc*.

CHARLES IX., king of France, son of Henry II. and Catharine of Medici, born in 1550, at St Germain-en-Laye, ascended the throne at the age of ten years, after the death of his brother Francis II. No regency was appointed, and it was deemed sufficient to write to the parliament, through the young prince, that he had requested his mother to undertake the administration of the public affairs; and the parliament acquiesced in this resolution, to avoid exciting new contests between the Guises and the princes of the blood. Catharine consented that the king of Navarre should be appointed governor-general of the realm, as she was too well aware of the weakness of his character to fear it. In order to gratify her ambition, she resolved to throw every thing into confusion. (See *Catharine de Medici*).—The Guises soon saw that they must oppose a Catholic league to the political associations of the Calvinists. (See *Guise*).—The cruel persecutions against the Huguenots now broke out. (See *Bartholomew's Day, St*).—The duke of Guise, who obtained possession of the person of the young king, was shot by an assassin before Orleans, in February, 1563. In his last moments, he advised the king and the queen mother to negotiate with the parties. This advice was followed; a treaty was signed, March 19, and Havre was taken from the English, July 27. The king, who was the same year declared of age, visited the provinces in company with his mother. At Bayonne, he had a meeting with his sister Isabella, the wife of Philip II. of Spain. This excited such suspicions in the Calvinists, that they took up arms, and immediately formed the plan of attacking the king on his return to Paris. Being warned in season, he escaped the danger; but this plot could not fail to arouse the hatred of Charles, who was proud by nature, and more to be pitied than blamed for his too great confidence in his artful mother. After the battle of St Denis, 1567, in which the constable of Montmorenci lost his life, Catharine entered into negotiations for peace. But the Calvinists reserved a part of the places which they were to have surrendered, and continued to keep up a communication with England and the German princes. A new civil war soon broke out. Notwithstanding the jealousy of Charles, Catharine placed the duke of Anjou at the head of the royal army. The prince of Condé having been shot in the battle of Jarnac, in 1569, and the admiral Coligni having been defeated at Montcontour, in the same year, the king concluded peace, in 1570, on terms which were so favourable to the Calvinists, that they seem even to have suspected treachery under them. The heads of that party did not therefore all appear at court when Charles celebrated his marriage with Elizabeth, the daughter of Maximilian II. By degrees this distrust disappeared, and the marriage of the young king of Navarre (afterwards Henry IV.) with Margaret, sister of Charles IX., seemed to banish every suspicion. This marriage took place August 18, 1572. On the 22d, the first attempt was made on the life of Coligni, and on the 24th began that massacre known under the name of the *massacre of St Bartholomew's*, from having taken place on the night of the festival of that saint. Civil war broke out for the fourth time, and Catharine now became aware of the errors of her policy. Charles could no longer conceal his aversion to her, and was on the point of assuming himself the reins of government, when he died, childless, in 1574. He was succeeded by his brother Henry III. Charles was brave, indefatigable, ambitious, of a lively, penetrating genius, and loved the sciences. The cruelties which disgrace his reign should be laid to the charge of his mother rather than himself.

CHARLES I., king of England and Scotland, was born in Scotland, in the year 1600, and was the second son of James VI. and Anne of Denmark. Soon after the birth of his son, James succeeded to the crown of England, and, upon the death of prince Henry, in 1612, Charles was created prince of Wales. His youth appears to have passed respectably, little being recorded of him previously to his romantic journey into Spain in company with Buckingham, in order to pay his court in person to the Spanish infanta. Through the arrogance of Buckingham, this match was prevented, and the prince was soon after contracted to Henrietta Maria, daughter of Henry IV. of France. In 1625, he succeeded to the throne, on the death of his father, and received the kingdom embroiled in a Spanish war, and full of suspicion and dislike to the minister Buckingham. The first parliament which he summoned, being much more disposed to state grievances than grant supplies, was dissolved; and, by loans and other expedients, an expedition was fitted out against Spain, which terminated in disgrace and disappointment. In the next year, a new parliament was summoned; and the disgust and jealousy, which prevailed between the king and this assembly, laid the foundation of the misfortunes of his reign. The house of commons impeached the minister, and the king supported him. They held fast the public purse, and he intimated a design of following *new counsels*, should they continue to resist his will, and suddenly and angrily dissolved them, after a short session, while they were preparing a remonstrance

against the levying of tonnage and poundage without consent of parliament. Charles then began to employ his threatened mode of raising funds, by loans, benevolences, and similar unpopular proceedings; which, however partially sanctioned by precedent, were wholly opposed to the rising notions of civil liberty throughout the nation, and to the constitutional doctrine, which rendered the commons the guardian and dispenser of the public treasure. His difficulties were further increased by a preposterous war with France, intended to gratify the private enmity of Buckingham, who added to the odium against him by an ill-fated expedition in assistance of the Huguenots of Rochelle.

In 1628, the king was obliged to call a new parliament, which showed itself as much opposed to arbitrary measures as its predecessor, and, after voting the supplies, prepared a bill, called "A petition of right, recognising all the legal privileges of the subject," which, notwithstanding the employment of all manner of arts and expedients to avoid it, Charles was constrained to pass into a law; and, had the concession been unequivocal and sincere, and the constitutional mode of government, which it implied, been really adopted by both sides, much that followed might have been prevented. Charles, however, by his open encouragement of the doctrines of such divines as Sibthorpe and Mainwaring, who publicly inculcated the doctrine of passive obedience, and represented all limitation of kingly power as seditious and impious, too clearly sanctioned the jealousy of the commons, who would not, in consequence, rest in confidence or slacken their attacks upon Buckingham, on which account they were suddenly prorogued. The assassination of the favourite soon after, by the enthusiast Felton, removed one source of discord, and Charles became more his own minister; and some differences with his queen, which had been fomented by Buckingham, being made up, he ever after continued much under her influence. The parliament which met in January, 1628, manifested so determined a spirit against the king's claim of levying tonnage and poundage by his own authority, that it was suddenly dissolved, and Charles was determined to try to reign without one. For this purpose, having judiciously terminated the pending wars between France and Spain, he raised Sir Thomas Wentworth, afterwards so celebrated as lord Strafford, to the principal place in his councils. This able statesman had begun his political career in opposition to the court, but, having been gained over, was, by his austerity, talent, and firmness, an exceedingly fit instrument to curb the spirit of resistance to prerogative, which had become so strong among the commons. In ecclesiastical affairs, Charles, unhappily for himself and the church, was guided by the counsels of Laud, then bishop of London, a prelate whose learning and piety were debased by superstition and a zeal as indiscreet as intolerant. Under these counsels, some years passed away in the execution of plans for raising money without the aid of parliament, with other dangerous expedients. The arbitrary courts of high commission and star chamber, in the hands of Laud, also exercised, in many instances, the most grievous oppression; of which the treatment of Williams, bishop of Lincoln, and others, affords memorable examples. In 1634, ship-money began to be levied, which being strictly applied to naval purposes, the nation at large acquiesced in it with less than usual repugnance; and some writers, who courageously attacked the court against the principle, were treated with so much severity, that others were deterred from following their example. So desperate did the cause of liberty at this time appear, that great numbers of the puritans emigrated to New England; and, by order of the court, a ship was prevented from sailing, in which were Sir Arthur Hazelrig, John Hampden, and Oliver Cromwell. It was in 1637, not long after this remarkable event, that Hampden commenced the career of resistance by refusing to pay ship-money; the right to levy which, without authority of parliament, he was determined to bring before a court of law. His cause was argued for twelve days in the court of exchequer; and, although he lost it by the decision of eight of the judges out of twelve, the discussion of the question was followed by the most important consequences in its operation upon public opinion.

It was in Scotland, however, that formal warlike opposition was destined to commence. From the beginning of his reign, Charles had endeavoured to introduce into that country a liturgy copied from the English—an innovation which produced the most violent tumults, and ended in the formation of the famous *Covenant*, in 1638, by which all classes of people mutually engaged to stand by each other. The Covenanters levied an army, which the king opposed by an ill-disciplined English force, so equivocally inclined, that, not able to trust it, Charles agreed to a sort of pacification. The next year, he raised another army; but, his finances being exhausted, after an intermission of eleven years, he again assembled a parliament, who, as usual, began to state grievances previously to granting supplies. Losing all patience, the king once more hastily dissolved it, and prosecuted several members who had distinguished themselves by their opposition. Raising money in the best manner he could devise, an English army was again made to proceed towards the north; but, being defeated by the Scots, it became obvious that affairs could no longer be managed without a parliament, and, in 1640, that dreaded assembly was again summoned, which proved to be the famous long parliament, whose career forms so memorable a portion of English history. It is not within the limits of this work to give an account of the proceedings connected with the prosecution, condemnation, and execution of Strafford and Laud, or the various measures of reaction in regard to ship-money, tonnage, and poundage, and the abolition of the iniquitous courts of high commission, and star chamber: suffice it to say, that Charles soon found himself reduced to a comparatively passive spectator of the ascendency of the democratical portion of the constitution, and was obliged, both in Scotland and in England, to yield to the torrent which assailed him.

In the mean time, a flame burst out in Ireland, which had no small effect in kindling the ensuing conflagration at home. The oppressed Catholic population of that country, during the confusion of the times, rose against the government for the purpose of regaining their rights. Very exaggerated accounts of the massacre of the Protestants are to be found in several of the historians. Later writers have established the fact, that the number who perished in this insurrection was very limited. The old Catholic settlers of the English pale joined the native Irish, and, to strengthen their cause, pretended to have a royal commission, and to act in defence of the king's prerogative against a puritanical and republican parliament. This pretended commission is now generally deemed a forgery; but such was the supposed partiality of Charles to popery, that this event added considerably to popular disaffection. The parliament being summoned, the king left the conduct of the war entirely to it; but it now became evident that the commons intended systematically to pursue their advantages, and to reduce the crown to a state of complete dependence. They framed a remonstrance, containing a recapitulation of all the errors of the

reign; renewed an attempt for excluding bishops from the house of lords; passed ordinances against superstitious practices; and so inflamed the popular odium against the Episcopal orders, as to intimidate its members from attending to their duty in parliament.

At length, it being apparent that either the zealous adherents of prerogative, or those who were anxious to establish the government upon a more democratic basis, must give way, Charles, instigated, it is supposed, by the injudicious advice of his queen and lord Digby, caused his attorney-general to enter, in the house of peers, an accusation against five leading members of the commons, and sent a sergeant-at-arms to the house to demand them. Receiving an evasive answer, he, the next day, proceeded himself to the house, with an armed retinue, to seize their persons. Aware of this intention, they had previously withdrawn; but the king's appearance with a guard caused the house to break up in great disorder and indignation. The accused members retired into the city, where a committee of the house was appointed to sit, and the city militia was mustered under a commander appointed by parliament, which also demanded the control of the army. Here the king made his last stand, the matter having now arrived at a point which arms alone could decide. The queen fled to Holland to procure ammunition, and Charles, with the prince of Wales, proceeded northwards, and, for a time, fixed his residence at York. The king was received in his progress with great demonstrations of loyalty from the gentry; and many eminent and virtuous characters, who had been the conscientious opposers of his arbitrary measures in the first instance, now joined his party. On the other hand, all the Puritans, the inhabitants of the great trading towns, and those who had adopted republican notions of government, sided with the parliament; and in no public contest was more private and public virtue ranged on both sides, however alloyed, as in all such cases, with ambition, bigotry, and the baser passions. The first action of consequence was the battle of Edge-hill, which, although indecisive, enabled the king to approach London, and produce considerable alarm. He then retired to Oxford, and negotiations were entered into which proved unavailing. Nothing decisive, however, happened against the royal side, until the battle of Marston-moor, in 1644, which was gained chiefly by the skill and valour of Cromwell. The succeeding year completed the ruin of the king's affairs, by the loss of the celebrated battle of Naseby.

Thenceforward a series of disasters attended his armies throughout the kingdom, and he took the resolution of throwing himself into the hands of the Scottish army, then lying before Newark. He was received with respect, although placed under guard as a prisoner; and, a series of abortive negotiations ensuing, an agreement was made with the parliament to surrender him to their commissioners, on the payment of a large sum, claimed as arrears by the Scottish army. The king was accordingly surrendered to the commissioners appointed, and was carried, in the first place, to Holmby-house, in Northamptonshire; subsequently, to the head-quarters of the army at Reading, and, soon after, to Hampton-court, where he was treated with no small portion of the respect exacted by his station. In the mean time, however, the army and Independents becoming all-powerful, he was led into some fears for his personal safety, and, making his escape with a few attendants, proceeded to the southern coast. Not meeting a vessel, as he expected, he crossed over to the Isle of Wight, and put himself into the hands of Hammond, the governor, a creature of Cromwell's, by whom he was lodged in Carisbrook castle.

While in this remote situation, the Scots, ashamed of the manner in which they had delivered him up, and indignant at the proceedings of the English marched a considerable army to his relief, under the duke of Hamilton. This force, although strengthened by a large body of English royalists, was entirely routed and dispersed by Cromwell, as were the insurgents in Kent and Essex by Fairfax. During this employment of the army and its leaders, a new negotiation was opened with the king in the Isle of Wight, who agreed to nearly everything demanded of him, except the abolition of Episcopacy; and so much had it now become the interest of the parliament itself to comply with him, that a vote was at length carried, that the king's concessions were a sufficient ground for a treaty. The triumphant army, however, on its return, cleared the house by force of all the members opposed to its views; and, thereby procuring a reversal of this vote, the king's person was again seized, and, being brought from the Isle of Wight to Hurst castle, preparations were made for trying him on the capital charge of high treason against the people. As the house of lords refused to concur in a vote for this purpose, the commons declared its concurrence unnecessary; and the king, being conducted to London, and stripped of all ensigns of royalty, was brought before the court of justice, specially erected for this unprecedented trial, on the 20th of Jan., 1649.

The behaviour of Charles had been calm and dignified throughout his adversity, and in no respect was it more so than on this occasion. Three times he objected to the authority of the court, when brought before it, and supported his refusal by clear and cogent arguments. At length, evidence being heard against him, on the proof that he had appeared in arms against the parliamentary forces, sentence of death was pronounced against him. He requested a conference with both houses, which was rejected, and only three days were allowed him to prepare for his fate. As he left the tribunal, he was insulted by a portion of the soldiery, and other base and unpardonable indignities were offered to him, which he bore with dignified equanimity. The interposition of foreign powers, the devotion of friends and ministers, who sought to save him by taking all the blame upon themselves, were vain. After passing three days, between his condemnation and execution, in religious exercises, and in tender interviews with his friends and family, he was led to the scaffold. His execution took place before the banqueting-house, Whitehall, on the 30th of Jan., 1649, where, after addressing the people around him with great firmness and composure, the ill-fated king submitted to the fatal stroke.

Thus died Charles I., in the forty-ninth year of his age, than whom few kings have been more distinguished for the virtues which ornament and dignify private life. He was, in an eminent degree, temperate, chaste, and religious, and, although somewhat cold and reserved in demeanour, was, in fact, highly kind and affectionate, and secured the warmest attachment of those who had access to him. His talents were also considerable; but he shone more in suffering than in acting, and was deficient in the decision and self-reliance, which are necessary to superior executive ability. His mind was cultivated by letters, and a taste for the polite arts, particularly painting, the professors of which he munificently encouraged; and the collections of works of art, which he made in his prosperity, show great judgment in the selection. He had also a feeling for poetry, and wrote in a good style in prose, without reference to the famous *Eikon Basilike*, his claim to which is now generally disputed. To all these personal and private acquirements, he joined a graceful figure and pleasing countenance, and, under happier circumstances, would

doubtless have been regarded as a very accomplished sovereign.

With respect to his political character, as exhibited in the great struggle between himself and the parliament, it is impossible not to perceive that he strove to maintain a portion of prerogative that had become incompatible with any theory of civil and religious liberty; but it is equally certain that he only sought to retain what his predecessors had possessed, and what power never concedes willingly. There are periods, possibly, in the history of every people, in which old and new opinions conflict, and a concussion becomes unavoidable; and it was the misfortune of Charles to occupy the throne at a time when the developement of the representative system necessarily encountered the claims of prerogative. If the parliament had acquiesced in the kingly pretensions, as usually explained by Laud and the high-churchmen of the day, it would have dwindled into a mere registry of royal edicts, like those of France. On the other hand, Charles acted a part which every monarch in his situation, may be expected to act; for a philosophical appreciation of the true nature of a political crisis is scarcely to be expected from one who sits upon a throne. The most forcible accusation against Charles is on the score of insincerity. It is asserted, that he never intended to fulfill the conditions imposed upon him. This can scarcely be denied; but it is equally certain that some of them might justly be deemed questionable, if not demanded with a direct view to produce that conduct in the king which so naturally followed. On the whole, though many may demur to his title of *martyr*, few will hesitate to regard him as a victim to a crisis which the growing power of the commons, and the unsettled nature of the prerogative, rendered sooner or later inevitable. His fate, like that of the house of Stuart generally, exhibits the danger and absurdity of those high theoretical notions of kingly prerogative, which, while they add very little to the real power of those whom they are intended to favour, too frequently seduce them into encounters with currents of principle and action, a resistance to which is always futile, and generally destructive.

CHARLES II., king of England, Ireland, and Scotland, son of Charles I. and Henrietta Maria of France, was born in 1630. He was a refugee at the Hague on the death of his father, on which he immediately assumed the royal title. He first intended to proceed to Ireland, but was prevented by the progress of Cromwell. He therefore listened to an invitation from the Scots, who had proclaimed him their king; and, being obliged to throw himself into the hands of the rigid Presbyterians, they subjected him to many severities and mortifications, which caused him to regard that sect ever after with extreme aversion. In 1651, he was crowned at Scone; but the approach of Cromwell, with his conquering army, soon rendered his abode in Scotland unsafe. Hoping to be joined by the English royalists, he took the spirited resolution of passing Cromwell, and entering England. He was immediately pursued by that active commander, who, with a superior army, gained the battle of Worcester; and Charles, after a variety of imminent hazards, in one of which he was sheltered for twenty-four hours in the branches of a spreading oak, reached Shoreham, in Sussex, and effected a passage to France. He passed some years in Paris, little regarded by the court, which was awed by the power of the English commonwealth; and this indignity induced him to retire to Cologne.

It is the province of history to state the circumstances that produced the restoration, which general Monk so conducted, that Charles, without a struggle, succeeded at once to all those dangerous prerogatives, which it had cost the nation so much blood and treasure, first to abridge and then to abolish. This unrestrictive return was not more injurious to the nation than fatal to the family of the Stuarts, which, had a more rational policy prevailed, might have occupied the throne at this moment. On the 29th of May, 1660, Charles entered his capital amidst universal and almost frantic acclamations; and the different civil and religious parties vied with each other in loyalty and submission. His first measures were prudent and conciliatory. Hyde, lord Clarendon, was made chancellor and prime-minister; and an act of indemnity was passed, from which those alone were excepted who were immediately concerned in the late king's death. A settled revenue was accepted in lieu of wardship and purveyance, and the army was reduced. In respect to religion, there was less indulgence; for not only were prelacy and the parliamentary rights of bishops restored, which was to be expected, but an act of uniformity was passed, by the conditions of which nearly all the Presbyterian clergy were driven to a resignation of their livings. In 1662, he married the infanta of Portugal, a prudent and virtuous princess, but in no way calculated to acquire the affection of a man like Charles. The indolence of his temper, and the expenses of his licentious way of life, soon involved him in pecuniary difficulties; and the unpopular sale of Dunkirk to the French was one of his most early expedients to relieve himself. In 1663, a rupture took place with Holland, which, as it proceeded from commercial rivalry, was willingly supported by parliament. It was attended, in the first instance, by various naval successes; but, France and Denmark entering into the war, as allies of the Dutch, the English were overmatched, and a Dutch fleet entered the Thames, and, proceeding up the Medway, burned and destroyed ships as high as Chatham. Such was the naval disgrace of a reign, which, on many other accounts, is probably the most nationally discreditable one in the English annals. The domestic calamities of a dreadful plague, in 1665, and of the great fire of London, in 1666, added to the disasters of the period. Soon after, Clarendon, who had become very unpopular, and was personally disagreeable to Charles, was dismissed, and sought shelter from his enemies by a voluntary exile. A triple alliance between England, Holland, and Sweden, for the purpose of checking the ambition of Louis XIV., followed. It did honour to the political talents of Sir William Temple, and was one of the few public measures of the reign which deserve approbation. The thoughtless profusion of Charles, however, soon brought him into a condition which rendered him the mere pensioner of Louis, by whose secret aid he was supported in all his attempts to abridge the freedom of his people. In 1670, he threw himself into the hands of the five unprincipled ministers, collectively denominated the *cabal*, who supported him in every attempt to make himself independent of parliament. A visit which Charles received from his sister, the duchess of Orleans, was rendered subservient to French policy, by means of one of her attendant ladies, a beautiful Frenchwoman. This female made, as was intended, a conquest of Charles, who created her duchess of Portsmouth; and, amidst all his other attachments, she retained an influence over him which kept him steadily attached to France.

The party troubles of this reign commenced, about this time, by the open declaration of the duke of York, presumptive heir to the crown, that he was a convert to the Roman Catholic religion. Soon after, the ministry broke the triple alliance, and planned a

rupture with the Dutch; and, as the king did not choose to apply to parliament for money to carry on the projected war, he caused the exchequer to be shut up in January, 1672, and, by several other disgraceful and arbitrary proceedings, gave great disgust and alarm to the nation. The naval operations against the Dutch were by no means successful, and, a new parliament being called, which strongly expressed the discontent of the nation, the cabal was dissolved, and a separate peace made with Holland in 1674. Divisions in the cabinet, fluctuations in the king's measures, and parliamentary contests, followed, and occupied the next three years, until, in 1677, Charles performed a popular act, by marrying his niece, the princess Mary, to the prince of Orange. By taking some decided steps in favour of the Dutch, he also forwarded the peace of Nimeguen, in 1678. The same year was distinguished by the pretended discovery of the celebrated popish plot, for the assassination of the king, and the introduction of the Catholic religion. Notwithstanding the infamous characters of Oates and Bedloe, and the improbable nature of their disclosures, their tale, supported by the general suspicion of the secret influence of a Catholic faction, met with universal belief; and, in relation thereto, the parliament exhibited nearly as much credulity and heat as the vulgar. Many Catholic lords were committed; Coleman, the duke of York's secretary, and several priests, were hanged; and a venerable nobleman, the earl of Stafford, was beheaded. The duke of York thought fit to retire to Brussels, and a bill for his exclusion from the throne passed the house of commons. Such was the state of the country, that Charles was obliged to give way to some popular measures, and the great palladium of civil liberty, the habeas corpus bill, passed during this session. The temper of the parliament was so much excited, that the king first prorogued and then dissolved it. The court now sought to establish a balance of parties; to distinguish which, the terms *whig* and *tory* were about this time invented.

In 1680, a new parliament assembled, and the commons again passed the exclusion bill, which was rejected by the lords. This parliament was also dissolved in the next year, and a new one called at Oxford, which proved so restiff; that a sudden dissolution of it ensued; and, like his father, Charles determined henceforward to govern without one. By the aid of the tory gentry and the clergy, he obtained loyal addresses from all parts of the kingdom, and attachment to high monarchical principles came again into vogue. The charge of plots and conspiracies was now brought against the Presbyterians. A person named *College* was executed upon the same infamous evidence as had been previously turned against the Catholics; and the famous earl of Shaftesbury, who headed the popular party, was brought to trial, but acquitted. The nonconformists, generally, were also treated with much rigour; and a step of great moment, in the progress to arbitrary power, was the instituting suits at law (*quo warrantos*) against most of the corporations in the kingdom, by which they were intimidated to a resignation of their charters, in order to receive them back so modelled as to render them much more dependent than before. These rapid strides towards the destruction of liberty at length produced the celebrated Ryehouse plot, the parties to which certainly intended resistance; but that the assassination of the king was ever formally projected seems very doubtful. It certainly formed no part of the intention of lord William Russel, whose execution, with that of Algernon Sidney, on account of the plot, forms one of the striking events of this disgraceful reign.

Charles was, at this time, as absolute as any sovereign in Europe; and, had he been an active prince, the fetters of tyranny might have been completely riveted. Scotland, which, at different periods of his reign, had been driven into insurrection by the arbitrary attempts to restore Episcopacy, was at length completely dragooned into submission; and the relics of the Covenanters were suppressed with circumstances of great barbarity. It is said, however, that Charles was becoming uneasy at this plan, which was chiefly supported by the bigoted austerity of the duke of York; and that he had made a resolution to relax, when he expired, from the consequences of an apoplectic fit, in Feb., 1685, in the fifty-fifth year of his age, and twenty-fifth of his reign. At his death, he received the sacrament, according to the rites of the Romish church, and thus proved himself to have been, during the whole of his life, as hypocritical as profligate.

The character of Charles II. requires little analysis. He was a confirmed sensualist and voluptuary; and, owing to the example of him and his court, his reign was the era of the most dissolute manners that ever prevailed in England. The stage was an open school of licentiousness, and polite literature was altogether infected by it. Charles was a man of wit, and a good judge of certain kinds of writing, but was too deficient in sensibility to feel either the sublime or the beautiful, in composition; neither was he generous even to the writers whom he applauded. He possessed an easy good nature, but united with it a total indifference to anything but his own pleasure; and no man could be more destitute of honour or generosity. His ideas of the relation between king and subject, were evinced by his observation on Lauderdale's cruelties in Scotland:—"I perceive," said he, "that Lauderdale has been guilty of many bad things against the people of Scotland; but I cannot find that he has acted in any thing contrary to *my* interest." Yet, with all his selfishness and demerits as a king, Charles always preserved a share of popularity with the multitude, from the easiness of his manners. Pepys' memoirs, and other private documents, however, clearly show the opinion of the more reflecting portion of his subjects; and it is now pretty generally admitted, that, as he was himself a most dishonourable and heartless monarch and man, so his reign exhibited the English character in a more disgraceful light than any other in British history. It need not be added, that he left many illegitimate children, the descendents of some of whom are still among the leading peerage of the country. The fate of his most distinguished son, the ill-fated duke of Monmouth, is an affair of history.

CHARLES EDWARD STUART, called the *Pretender*, grandson of James II., king of England, son of James Edward and Clementina, daughter of prince Sobiesky, was born in 1720, at Rome, where his father enjoyed the friendship of the popes Clement XI. and Innocent XIII. The last scion of the royal house of Stuart, from the very cradle he was inspired with an impulse, that induced him, at the early age of twenty-two, to attempt the recovery of the throne of his ancestors. Supported by the court of Rome, he went to Paris in 1742, disguised as a Spanish courier, and succeeded in gaining over to his views Louis XV. 15,000 men were on the point of sailing from Dunkirk for England, when the English admiral Norris dispersed the whole French fleet, before it had gained the open sea. This prevented the French court from undertaking a second expedition; all the requests of Edward were in vain, and he now resolved to trust to his own exertions. With borrowed money, and seven trusty officers, he landed like a

knight-errant, June 27, 1745, on the north-western coast of Scotland, from a ship of eighteen guns, which contained arms for 1500 men. The attempt succeeded, and he found so many adherents among the discontented Scottish nobles, who went over to his party, together with the Highlanders under them, that he was soon at the head of a little army. With this he marched forward, conquered the British troops, which advanced to meet him from Edinburgh, captured Perth, and caused himself to be proclaimed regent of England, Scotland, and Ireland. He also took Edinburgh, Sept. 19, 1745, where he was once more proclaimed regent, and surrounded with his ministers and generals. September 21, 1745, he defeated at Prestonpans an army of 4000 British. He set the prisoners at liberty. His force was now 7000 strong. With this he advanced, and laid siege to Carlisle, Nov. 26, which, after three days, surrendered, and supplied him with a great number of arms. He now caused his father to be proclaimed king, and himself regent of England, removed his head-quarters to Manchester, and soon found himself within 100 miles of London, where many of his friends awaited his arrival. The rapid successes of the adventurer made the British government tremble; and a part of the British forces in Germany was recalled. Want of support, disunion, and jealousy among the adherents of the house of Stuart, some errors, and the superior force opposed to him, compelled prince Edward to retire in the beginning of 1746. The victory at Falkirk (January 23, 1746) was his last. As a final attempt, he risked the battle of Culloden, against the duke of Cumberland, April 27, 1746, in which his army was defeated, and entirely dispersed. The prince now wandered about for a long time through the wilds of Scotland, often without food, and the price of £30,000 sterling was set upon his head. He was at last discovered by his most faithful friend O'Neil, a Scottish nobleman: they escaped detection by sailing, in a miserable skiff, from island to island, and wandering from valley to valley, pursued by a thousand dangers; for constant search was made for Charles in every direction. At Lochnanach, he was fortunate enough to meet one of the French frigates, which had been sent for his rescue. September 29, 1746, five months after the defeat of Culloden, he sailed from Scotland, and arrived in France, destitute of every thing. By the interest of madame de Pompadour, prince Edward now received an annual pension of 200,000 livres for life; he had also 12,000 doubloons yearly from Spain. The peace of Aix-la-Chapelle (1748) deprived him of all prospect of recovering the throne of Britain; and when he heard that his own removal from France was stipulated in the articles of peace, his anger knew no bounds. It became necessary to carry him, under a guard, to the frontiers of Italy. He went to Rome, the residence of his father, James III.; but his relations to the Roman court were changed after his father's death, January 1, 1766. His often ridiculous requests in regard to the etiquette to be observed towards him, which he made under the name of count of Albany, rendered his presence troublesome. He went to Florence, till Pius VI. recalled him to Rome, by withdrawing his pension. That his family might not become extinct, he married in the fifty-second year of his age, April 17, 1772, a princess of Stolberg-Gedern. But his violence led to a separation, in 1780. (See *Albany*.) Edward now became addicted to intoxication. He died January 31, 1788, in the sixty-eighth year of his life. Three years before, he sent for his natural daughter from France, legitimated her, and declared her, on his royal authority, his lawful heiress, under the title of countess of Albany. His body was carried to Frascati, and entombed in a style worthy of a king. A sceptre, crown, sword, and the escutcheons of England and Scotland, adorned his coffin, and his only brother then living, the cardinal of York, performed the funeral service for "dead king Charles." The cardinal of York received from Britain an annual pension of £4000 sterling, from the year 1799, and died at Frascati, July 13, 1807. The Stuarts ruled in Scotland 400 years, and in England eighty-five years.

CHARLES XII., king of Sweden, born at Stockholm, June 27, 1682, was well instructed in the languages, history, geography, and mathematics. He understood German, Latin, and French. Curtius' history of Alexander was his favourite book. On the death of his father, in 1697, when he was but fifteen years old, he was declared of age by the estates. Meanwhile, the young king showed but little inclination for business: he loved violent bodily exercises, and especially the chase of the bear. To his jealous neighbours, this seemed a favourable time to humble the pride of Sweden in the north. Frederic IV. of Denmark, Augustus II. of Poland, and the czar Peter I. of Russia, concluded an alliance which resulted in the *northern war*, so called. The Danish troops first invaded the territory of the duke of Holstein-Gottorp. This prince, who had married the eldest sister of the king of Sweden, repaired to Stockholm, and asked for assistance. Charles had a particular attachment for him, and proposed, in the council of state, the most energetic measures against Denmark. After making some arrangements respecting the internal administration, he embarked at Carlscrona in May, 1700. Thirty ships of the line, and a great number of small transports, strengthened by an English and Dutch squadron, appeared before Copenhagen. Arrangements were making for the disembarkation, when Charles, full of impatience, plunged from his boat into the water, and was the first who reached land. The Danes retired before the superior power of the enemy. Copenhagen was on the point of being besieged, when the peace negotiated at Travendal was signed (Aug. 8, 1700), by which the duke of Holstein was confirmed in all the rights of which it had been attempted to deprive him. Thus ended the first enterprise of Charles XII., in which he exhibited as much intelligence and courage as disinterestedness. He adopted, at this time, that severe and temperate mode of life, to which he ever remained true, avoiding relaxation and useless amusements; wine was banished from his table; at times coarse bread was his only food; he often slept in his cloak on the ground; a blue coat, with copper buttons, was his whole wardrobe; he wore large boots, reaching above his knees, and gloves of buffalo skin. With respect to the female sex, he manifested the greatest indifference, and no woman ever had any influence over him.

After thus checking Denmark, the attacks of Augustus and Peter were to be repelled. The former was besieging Riga, the latter menaced Narva and the country situated about the gulf of Finland. Without returning to his capital, which, in fact, he never revisited, Charles caused 20,000 men to be transported to Livonia, and went to meet the Russians, whom he found, 80,000 strong, in a fortified camp, under the walls of Narva. On the 30th November, 1700, between eight and ten thousand Swedes placed themselves in order of battle, under the fire of the Russians, and the engagement began. On the previous evening, Peter had left his camp on pretence of bringing up reinforcements. In less than a quarter of an hour, the Russian camp was taken by storm. Thirty thousand Russians perished on the field or threw themselves into the Narva; the rest were taken prisoners or dispersed. After this

victory, Charles crossed the Dwina, attacked the intrenchments of the Saxons, and gained a decisive victory. Charles might now have concluded a peace, which would have made him the arbiter of the North; but, instead of so doing, he pursued Augustus to Poland, and determined to take advantage of the discontent of a great part of the nation, for the purpose of dethroning him. Augustus attempted in vain to enter into negotiations; in vain did the countess Konigsmark, mistress of Augustus, endeavour to obtain an interview with Charles, and disarm the Swedish hero by her beauty. Charles refused to negotiate with the king, or to speak with the countess.

The war continued: the Swedes gained a brilliant victory at Clissau; in 1703, all Poland was in the possession of the conquerors; the cardinal primate declared the throne vacant; and, by the influence of Charles, the new choice fell on Stanislaus Leczinsky. Augustus hoped to be secure in Saxony, as Peter had meanwhile occupied Ingria, and founded St Petersburg, at the mouth of the Neva. But the victor of Narva despised an enemy on whom he hoped, sooner or later, to take an easy revenge, and invaded Saxony. At Altranstadt (q. v.), he dictated the conditions of peace, in 1706. The Livonian Patkul, who was the prime mover of the alliance against Sweden (at that time Peter's ambassador in Dresden), was delivered up to him, on his demand, and was broken on the wheel. It was, with justice, a subject of astonishment, that a prince, till then so magnanimous, could stoop to such intemperate revenge. In other respects, Charles exhibited, during his stay in Saxony, moderation and magnanimity. He subjected his troops to the strictest discipline. Several ambassadors and princes visited the camp of the king at Altranstadt, among whom was Marlborough, who sought to discover Charles's plans, and convinced himself that the victorious hero would take no part in the great contests of the South. The king of Sweden, however, before he left Germany, required the emperor to grant to the Lutherans in Silesia perfect freedom of conscience; and the requisition was complied with.

In Sept., 1707, the Swedes left Saxony. They were 43,000 strong, well clothed, well disciplined, and enriched by the contributions imposed on the conquered. Six thousand men remained for the protection of the king of Poland: with the rest of the army Charles took the shortest route to Moscow. But, having reached the region of Smolensk, he altered his plan, at the suggestion of the Cossack hetman Mazeppa, and proceeded to the Ukraine, in the hope that the Cossacks would join him. But Peter laid waste their country, and the proscribed Mazeppa could not procure the promised aid. The difficult marches, the want of provisions, the perpetual attacks of the enemy, and the severe cold, weakened Charles's army in an uncommon degree. General Lowenhaupt, who was to bring reinforcements and provisions from Livonia, arrived with only a few troops, exhausted by the march, and by continual skirmishes with the Russians. Pultawa, abundantly furnished with stores, was about to be invested, when Peter appeared with 70,000 men. Charles, in reconnoitring, was dangerously wounded in the thigh; consequently, in the battle of June 27th, O. S. (July 8th), 1709, which changed the fortunes of the Swedish hero and the fate of the North, he was obliged to issue his commands from a litter, without being able to encourage his soldiers by his presence. This, and still more the want of agreement between Renschild and Lowenhaupt, were the reasons why the Swedes did not display their usual skill in manœuvring, which had so often given them the victory. They were obliged to yield to superior force, and the enemy obtained a complete victory. Charles saw his generals, his favourite minister, count Piper, and the flower of his army, fall into the power of those Russians so easily vanquished at Narva. He himself, together with Mazeppa, fled with a small guard, and was obliged, notwithstanding the pain of his wounds, to go several miles on foot. He finally found refuge and an honourable reception at Bender, in the Turkish territory. His enemies were now inspired with new hope. Augustus protested against the treaty of Altranstadt; Peter invaded Livonia; Frederic of Denmark made a descent on Schonen.

The regency in Stockholm took measures for the defence of the Swedish territory. General Steinbock assembled a body of militia and peasants, defeated the Danes at Helsingborg, and compelled them to evacuate Schonen. Several divisions were sent to Finland to keep off the Russians, who, nevertheless, advanced, being superior in numbers. Charles, meanwhile, negotiated at Bender with the Porte; succeeded in removing the ministers who were opposed to him, and induced the Turks to declare war against Russia. The armies met on the banks of the river Pruth, July 1, 1711. Peter seemed nearly ruined, when the courage and prudence of his wife (see *Catharine*) produced a peace, in which the interests of Charles were entirely neglected. This monarch, however, projected at Bender new plans, and, through his agents, solicited of the Porte auxiliaries against his enemies. But the Russian agents were no less active to prepossess the Porte against him, pretending that Charles designed to make himself, in the person of Stanislaus, the actual master of Poland, in order, from thence, in connexion with the German emperor, to attack the Turks. The seraskier of Bender was ordered to compel the king to depart, and, in case he refused, to bring him, living or dead, to Adrianople. Little used to obey the will of another, and apprehensive of being given up to his enemies, Charles resolved to defy the forces of the Porte, with the two or three hundred men of which his retinue consisted, and, sword in hand, to await his fate. When his residence at Varnitza, near Bender, was attacked by the Turks, he defended it against a whole army, and yielded only step by step. The house took fire, and he was about to abandon it, when, his spurs becoming entangled, he fell, and was taken prisoner. His eyelashes were singed by powder, and his clothes covered with blood. Some days after this singular contest, Stanislaus came to Bender to ask the king of Sweden to give his consent to the treaty which he saw himself obliged to conclude with Augustus; but Charles refused. The Turks now removed their prisoner from Bender to Demotica, near Adrianople. Here he spent two months in bed, feigning sickness, and employed in reading and writing. Convinced, at last, that he could expect no assistance from the Porte, he sent a parting embassy to Constantinople, and set off in disguise with two officers.

Accustomed to every deprivation, Charles pursued his journey on horseback, through Hungary and Germany, day and night, with such haste, that only one of his attendants was able to keep up with him. Exhausted and haggard, he arrived before Stralsund about one o'clock on the night of the 11th Nov. O. S. (22d), 1714. Pretending to be a courier with important despatches from Turkey, he caused himself to be immediately introduced to the commandant, count Dunker, who questioned him concerning the king, without recognizing him till he began to speak, when he sprang joyfully from his bed, and embraced the knees of his master. The report of Charles's arrival spread rapidly throughout the city. The houses were illuminated. A combined army of Danes, Saxons,

Russians, and Prussians immediately invested Stralsund. Charles performed, during the defence, miracles of bravery. But, being obliged to surrender the fortress, on Dec. 15, 1715, he proceeded to Lund, in Schonen, and took measures to secure the coast. He then attacked Norway. The baron of Gortz, whose bold but intelligent plans were adapted to the situation of the Swedish monarchy, was, at that time, his confidential friend. His advice was, that Charles should gain Peter the Great to the interest of Sweden by important concessions, make himself master of Norway, and from thence land in Scotland, in order to dethrone George I., who had declared himself against Charles. Gortz discovered resources for prosecuting the war, and entered into negotiations, at Aaland, with the plenipotentiaries of the czar. Peter was already gained, and a part of Norway conquered; the fortunes of Sweden seemed to assume a favourable aspect; Charles was besieging Fredericshall, when, on Nov. 30, 1718, as he was in the trenches, leaning against the parapet, and, examining the workmen, he was struck on the head by a cannon ball. He was found dead in the same position, his hand on his sword, in his pocket the portrait of Gustavus Adolphus and a prayer book. It is more than probable, that the ball which killed him was fired, not from the fortress, but from the Swedish side. His adjutant, Siguier, has been accused as an accomplice in his murder. A century afterwards, Nov. 30, 1818, Charles XIV. caused a monument to be erected on the spot where he fell.

At Charles's death, Sweden sunk from the rank of a leading power. In his last years, he had formed great plans for the improvement of its navy, trade, and commerce. At Lund, he often conversed with the professors of the university, and attended public disputations on geometry, mechanics, and history. In Bender, the reading of useful books was one of his principal employments: he sent for Swedish scholars, and caused them to travel through Greece and Asia. Accounts of some of these travels have been printed; there are others in manuscript at Upsal. Firmness, valour, and love of justice were the grand features of Charles's character, but were disfigured by an obstinate rashness. After his return, he showed himself more peaceable, gentle, moderate, and disposed to politic measures. Posterity, considering him in relation to his times, will say that he had great virtues and great faults; that he was seduced by prosperity, but not overcome by adversity. His history has been written by his chaplain, Norberg. Alderfeld has published his military memoirs. Voltaire's *Histoire de Charles XII.*, though not complete, nor free from errors in dates, names, and geographical facts, is written with much clearness and elegance.

CHARLES XIII.; king of Sweden; born Oct. 7, 1748; second son of king Adolphus Frederic and Louisa Ulrica, sister of Frederic the Great of Prussia. Having been appointed, at his birth, high admiral of Sweden, his education was directed chiefly to the learning of naval tactics, for which purpose he accompanied several cruises in the Cattegat. In 1765, he became honorary president of the society of sciences at Upsal. In 1770, he commenced the tour of Europe. The death of Adolphus Frederic recalled him to Sweden, where he took an important part in the revolution of 1772. His brother Gustavus III., appointed him governor-general of Stockholm, and duke of Sudermannland. In 1774, he married Hedwig Elizabeth Charlotte, princess of Holstein-Gottorp. In the war with Russia, in 1788, he received the command of the fleet, defeated the Russians in the gulf of Finland, and, in the most dangerous season of the year, brought back his fleet in safety to the harbour of Carlscrona, after which he was appointed governor-general of Finland. After the murder of Gustavus III., in 1792, he was placed at the head of the regency, and, happily for Sweden, preserved the country at peace with all other nations, while he united with Denmark for the protection of the navigation in the northern seas. He likewise founded a museum, established a military academy for two hundred pupils, and gained universal esteem. In 1796, he resigned the government to Gustavus Adolphus IV., who had become of age, and retired, as a private man, to his castle of Rosersberg. He never appeared again in public life till a revolution hurled Gustavus Adolphus IV., in 1809, from the throne, and placed Charles at the head of the state, as administrator of the realm, and, some months afterwards, June 20, 1809, as king of Sweden, at a very critical period. The peace with Russia, at Fredericksham, Sept. 17, 1809, gave the country the tranquillity necessary for repairing its heavy losses, and for completing the constitution. He had already adopted prince Christian of Holstein-Sonderburg-Augustenburg as his successor, and, after his death, marshal Bernadotte, who was elected by the estates, in August, 1810, to take the place of the prince. On him he bestowed his entire confidence. May 27, 1811, he founded the order of Charles XIII., which is conferred solely on free-masons of high degree. June 21, 1816, he acceded to the holy alliance. His prudent conduct in the war between France and Russia, in 1812, procured Sweden an indemnification for Finland by the acquisition of Norway, Nov. 4, 1814. Although some disappointed nobles may have given utterance to murmurs against his government, Charles XIII. nevertheless enjoyed the love of his people till his death, Feb. 5, 1818.

CHARLES EMANUEL I., duke of Savoy, surnamed the *Great*; born at the castle of Rivoli, in 1562. He proved his courage in the battles of Montbrun, Vigo, Asti, Chatillon, Ostage, at the siege of Berue, and on the walls of Suza. He formed, 1590, the plan of uniting Provence to his dominions. Philip II. of Spain, his father-in-law, obliged the parliament of Aix to acknowledge him as the protector of this province, in order, by this example, to induce France to acknowledge the king of Spain as protector of the whole realm. The duke of Savoy, not less ambitious, likewise aimed at this crown; and after the death of Matthias, desired also to be chosen emperor of Germany. He likewise intended to conquer the kingdom of Cyprus, and to take possession of Macedonia, the inhabitants of which, oppressed by the Turks, offered him the sovereignty over their country. The citizens of Geneva were obliged to defend their city, in 1602, against this ambitious prince, who fell upon them by night, in time of peace (See *Geneva*). Henry IV., who had reason to complain of the duke, and whose general, the duke of Lesdiguiere, had beaten Charles Emanuel several times, entered, at last, into a treaty of peace with him, not disadvantageous to the duke of Savoy; but he could not remain quiet, and began again a war with France, Spain, and Germany. He died of chagrin, at Savillon, 1630. He is one of those princes who render the surname of *Great* suspicious. His heart was as hard as his native rocks. He built palaces and churches, loved and patronized the sciences, but thought little of making them sources of happiness.

CHARLES I., king of Spain. See *Charles V.*

CHARLES IV., king of Spain, born at Naples, 12th Nov., 1740, came to Madrid in 1759, when his father, Charles III., after the death of his brother, Ferdinand VI., ascended the Spanish throne, and succeeded him Dec. 13, 1788. He was married to the princess of Parma, Louisa Maria. Too imbecile

to govern, he was always ruled by his wife and his ministers, among whom the prince of peace, Godoy (q. v.), duke of Alcudia, from the year 1792, had unbounded influence over him. The hatred which this favourite drew on himself from the prince of Asturias, and other grandees, brought on a revolution in 1808, which enabled Napoleon to dethrone the Bourbons (See *Spain*). Charles abdicated at Aranjuez, March 19, revoked this abdication, and finally ceded, at Bayonne, his right to the throne to Napoleon, who settled on him for life the palace of Compiegne and a pension of thirty millions of rials, of which two millions were destined for the queen's jointure. Charles after this lived at Compiegne with the queen and the prince of peace, but subsequently exchanged this residence for Rome, where the climate was more congenial to him. From 1815, he occupied the palace Barberini, in this city. Hunting he always made his principal employment. He died at Naples, Jan. 19, 1819, of a relapse of the gout, while on a visit to his brother, the king of the Two Sicilies. His wife died a short time previous, in Dec., 1818. Charles was an immense eater.

CHARLES AUGUSTUS of Weimar. See *Weimar*.

CHARLES RIVER; a river in Massachusetts, which flows into Boston harbour, dividing Boston from Charlestown. The source of the principal branch is a pond bordering on Hopkinton. It is navigable for lighters and large boats to Watertown, seven miles.

CHARLESTON; a city and seaport of South Carolina, in a district of the same name; 120 miles S.S.E. Columbia, 118 N.E. Savannah, 590 S.S.W. Baltimore; lon. 79° 54′ W.; lat. 32° 47′ N.: population in 1790, 16,359; in 1800, 18,712; in 1810, 24,711; 11,668 whites, and 13,043 blacks: in 1820, 24,780; 5323 free white males, 5330 free white females; 12,552 slaves, 1475 free people of colour: in 1830, 30,289. It is situated on a tongue of land formed by the confluence of the rivers Cooper and Ashley, which unite just below the city, and form a spacious and convenient harbour, communicating with the ocean below Sullivan's island, seven miles from Charleston. At the mouth of the harbour, there extends, from shore to shore, a sand-bank, dangerous to vessels, but having two channels, the deepest of which has sixteen feet of water at low tide. The harbour is defended by fort Pinkney and fort Johnson, which are on islands, the former two, and the latter four miles below the city; and by fort Moultrie on Sullivan's island. Charleston contains a city-hall, an exchange, a custom-house, a guard-house, a theatre, an orphan house, an hospital, an alms-house, two arsenals, two markets, a college, and nineteen houses of public worship, four for Episcopalians, three for Presbyterians, three for Methodists, two for Congregationalists, one for Lutherans, two for Roman Catholics, one for French Protestants, one for Baptists, one for Friends, and a Jews' synagogue. The Charleston library contains about 13,000 volumes. The orphan asylum is a noble and well endowed institution, which supports and educates nearly 200 orphan children. There are several other charitable societies richly endowed, particularly the South Carolina society, the St Andrew's society, and the Fellowship society, instituted for the relief of widows and orphans. The city is regularly laid out in parallel streets, which are intersected by others nearly at right angles. The tongue of land, on which it is built, was originally indented with creeks and narrow marshes, which have been filled up; and it is drier and more elevated than most parts of the low country of South Carolina. Many of the houses are elegant, and furnished with piazzas. It is much the largest town in the state, and was formerly the seat of government. It has an extensive commerce. The shipping owned here, in 1816, amounted to 36,473 tons; in 1820, to 28,403 tons. That dreadful distemper, the yellow fever, has made frequent ravages in Charleston; but its effects have been chiefly confined to persons from more northern situations; and the climate of the city is accounted healthy to the native inhabitants, more so than that of most other Atlantic towns in the Southern States. Its superior salubrity attracts the planters from the surrounding country, and it is the favourite resort of the wealthy from the West Indies. It affords much agreeable society, and is reckoned one of the gayest towns in the United States. See *Carolina, South*.

CHARLESTOWN; a post-town in Middlesex county, Massachusetts, one mile north of the centre of Boston; population, in 1820, 6591. The principal part of the town is finely situated on a peninsula, formed by Charles and Mystic rivers, which here flow into Boston harbour. Charlestown is connected with Boston by two bridges across Charles river; with Chelsea and Malden by two others across Mystic river, and with Cambridge by a bridge across a bay of Charles river. It is a pleasant and flourishing town, the largest in the county of Middlesex, and advantageously situated for trade and manufactures. The principal public buildings are the state prison, the Massachusetts hospital for the insane, a market-house, alms-house, and five houses of public worship. One of the principal navy-yards in the United States occupies about sixty acres of land, in the southeast part of this town. It is enclosed, on the land side, by a wall of solid masonry, and contains, besides other buildings, several arsenals, magazines of public stores, and three immense edifices, each sufficiently capacious to receive a ship of 100 guns, with all the apparatus for its construction.

Bunker hill, on which was fought one of the most celebrated battles of the American revolution, is in this town. (For an account of the events which brought on the battle, see *Massachusetts* and *United States*.) The British army in Boston had been increased to about 10,000 men, by the arrival of reinforcements, towards the end of May, 1775, and was under the command of general Gage, governor of Massachusetts bay, generals Howe, Clinton, Burgoyne, &c. The American army of citizen-soldiers amounted to about 15,000 men, enlisted for a few months, without organization or discipline. They were armed with fowling-pieces, but few of them provided with bayonets. The whole was under the command of general Ward, of Massachusetts, whose head-quarters were at Cambridge. The right wing, under brigadier-general Thomas, occupied the heights of Roxbury; the left, under colonel Stark, was stationed at Medford. The city of Boston is built on a small peninsula, having the town of Charlestown, also built on a peninsula, and separated from it by a narrow arm of the sea, about 1500 feet wide, on the north. The heights of Charlestown, Breed's hill (sixty-two feet high) and Bunker hill (110 feet high, about 130 rods N.W. of the former), command the city. The Americans having received information of the intention of the British to occupy these heights, and advance into the country, orders were issued to colonel Prescott (June 16) to take possession of Bunker hill in the evening, and erect the fortifications requisite to defend it. General Putnam had the superintendence of the expedition. Finding, on their arrival, that, though Bunker hill was the most commanding position, it was too far from the enemy to annoy his shipping and army, the provincials determined to fortify Breed's hill, and began their labour soon after midnight. Every thing had been conducted with so much silence, that the British were not aware

of their presence till daybreak, when the ships of war and floating batteries, which lay in the harbour of Charlestown, together with a battery on Copp's hill, opened a heavy fire on the redoubt which had been completed during the night. The Americans, meanwhile, continued their labour, until they had thrown up a small breastwork, extending north, from the east side of the redoubt, to the bottom of the hill. About one o'clock, the British, under general Howe, landed at Morton's point, in Charlestown, without opposition. Here they waited for reinforcements, which arrived soon after. The whole number amounted to about 5000 men, with six field-pieces and howitzers. The original detachment of provincials amounted to 1000 men, with two field-pieces. They had been reinforced by about the same number, among whom were the New Hampshire troops, under colonel Stark. General Pomeroy, and general Warren, president of the provincial congress, joined the ranks as volunteers. The troops on the open ground formed a cover from the musketry of the enemy, by pulling up the rail fences, placing them at small distances apart in parallel lines, and filling up the intervening space with new-mown grass. The British columns now moved forward, under general Howe, to the attack of the rail fence, and, under general Pigot, to attack the breastwork and redoubt. The Americans impatiently withheld their fire until, according to the words of Putnam, "they saw the white of their enemies' eyes." The British were repulsed with great loss. Had they charged, they would probably have been more successful, as the American troops were almost entirely destitute of bayonets. A second attack, during which the village of Charlestown was burned to the ground, was attended with the same result. But the Americans had nearly expended their ammunition, and their communication with the main army was interrupted by the fire of the floating batteries, which enfiladed Charlestown neck. The English now rallied for a third attack, determined to concentrate their forces on the redoubt and breastwork, and to charge; at the same time, their artillery turned the left of the breastwork, enfiladed the line, and sent their balls directly into the redoubt. The Americans, after resisting with stones and the butts of their guns, retreated under a heavy fire. They were, however, not pursued very warmly, and drew off with an inconsiderable loss. They had 115 killed, among whom was general Warren, 305 wounded, and 30 made prisoners. The British loss was 1054 killed and wounded. June 17, 1825, the fiftieth anniversary of this battle was commemorated by a public celebration, and the corner-stone of the *Bunker hill monument* was laid.

CHARLEVOIX, Peter Francis Xavier de, a French Jesuit, was born at St Quentin, in 1682, and taught languages and philosophy with some reputation. He was, for some years, a missionary in America, and, on his return, had a chief share in the *Journal de Trévoux* for twenty-two years. He died in 1761, greatly esteemed for his high moral character and extensive learning. Of his works, the *Histoire Générale de la Nouvelle France* is the most valuable. This describes his own experience, and the manners and customs of the native Americans, for which he is often quoted, as a writer of good authority. His style is simple and unaffected, but not perfectly correct.

CHARLOTTE AUGUSTA, daughter of queen Caroline and George IV., and the wife of prince Leopold of Coburg, was born at Carlton house, Jan. 7, 1796, and passed the first years of her life under the eyes of her mother, who watched over her with the fondest affection. She was afterwards placed under the care of lady Clifford, and the bishop of Exeter superintended her studies. These were calculated to prepare her to become, one day, the queen of a great nation, and she was obliged to attend to them from morning to evening. She is said to have been well acquainted with the principal ancient writers, and with the history and statistics of the European states, especially with the constitution and laws of her native country. She spoke, with ease, French, German, Italian, and Spanish, sung well, played on the harp, piano, and guitar, and sketched landscapes from nature with much taste. Her style of writing was pleasing, and she was fond of poetry. In the unfortunate dissensions between her father and mother, she inclined to the side of the latter. The prince of Orange was fixed upon as her future husband, and the nation desired their union, because the prince had been educated in England, and was acquainted with the customs and interests of the people. After having completed his studies at the university of Oxford, he had served in the British army in Spain, and distinguished himself. The union, however, was prevented by the disinclination of the princess. In the mean time, she was introduced at court, in 1815, on her nineteenth birthday. The princess, who, in any situation, would have been an ornament to her sex, displayed an ardent but generous disposition, and independence and loftiness of sentiment. She often said that queen Elizabeth must be the model of an English queen; and some persons even thought there was a resemblance between them. In 1814, prince Leopold of Coburg visited England, in the suite of the allied sovereigns, who went to London after the peace of Paris. His cultivated mind and amiable manners having made an impression on the heart of the princess, he was permitted to sue for her hand. Their marriage, the result of personal inclination, was solemnized May, 2, 1816. The prince (whom Napoleon declared, at St Helena, one of the finest men he had ever seen) loved her with tenderness. They were always together, rode out in company, visited the cottages of the country people, and exhibited a pleasing picture of conjugal love. They seldom left Claremont, and only went to London when their presence at court was necessary. Their domestic life resembled that of a private family: after dinner, they painted together, and the evenings were devoted to music or reading. Meanwhile, the nation anxiously expected the moment when the princess, who was highly beloved, should become a mother. The expectations which had been entertained, however, were disappointed by a premature delivery. England soon conceived new hopes; but, Nov. 5, 1817, after three days of suffering, the princess was delivered of a dead child. A few hours after her delivery, she was seized with convulsions, and breathed her last. The physician who had attended her shot himself.

CHARLOTTENBURG; a residence of the king of Prussia, built by Sophia Charlotte, the first queen of Prussia, on the banks of the Spree, about three miles from Berlin, with a beautiful garden. The town, which has lately grown up, contains 430 houses, of which a large number are public houses, and 4700 inhabitants. A beautiful walk leads through the park of Berlin to Charlottenburg, which is a favourite resort of the citizens of Berlin. In the garden adjoining the castle is the tomb of the late queen Louisa, by the statuary Rauch.

CHARLOTTESVILLE; a post-town, and capital of Albemarle county, Virginia; lat. 38° 2′ N.; lon. 78° 52′ W. It is very pleasantly situated, one mile from the Rivanna, and is laid out in squares of three or four acres. The university of Virginia was established here, by the legislature, in 1817. The buildings comprise ten pavilions, for the accommo-

dation of professors; 109 dormitories and six hotels, for the lodging and dieting of the students. The site is a little distance out of the village, and occupies 200 acres. The institution is to receive annually from the Virginia literary fund, the sum of 15,000 dollars.

CHARON, in mythology; the son of Erebus and Nox. It was his office to ferry the dead, in his crazy boat, over the dark floods of Acheron, over Cocytus, resounding with the doleful lamentations of the dead, and, finally, over the Styx, dreaded even by the immortals. The shades were each obliged to pay him an obolus, which was put, at the time of burial, into the mouth of the deceased. Those who could not pay the fare, or had been so unfortunate as to find no grave in the upper world, were compelled to wander on the desolate banks of the Acheron, till Charon was pleased to carry them over to their final resting-place. He was represented as an old man, with a gloomy aspect, matted beard, and tattered garments. Respecting the Egyptian origin of this fable, see *Cemetery*, and *Egyptian Mythology*.

CHAROST (Armand Joseph de Bethune), duke of, born at Versailles, in 1728, a worthy descendant of his great ancestor Sully, distinguished himself, on many occasions, in the military service of his country. He was the friend and father of his soldiers, and rewarded the brave from his own resources. In 1758, he sent all his plate to the mint, to supply the necessities of the state. The peace concluded in 1763 restored him to a more quiet sphere of usefulness; yet he did not discontinue his favours towards the soldiers whom he had commanded. He was particularly active in the promotion of agriculture and public institutions. Long before the revolution, he abolished the feudal services on his estates, and wrote against feudal instruction. He established charitable institutions in sundry parishes, provided for the support and instruction of orphans, employed physicians and midwives, founded and liberally endowed an hospital. In a year of dearth, he imported grain into Calais at his own expense. In the provincial assemblies, he spoke against the *corvées*. In the assembly of the notables, he declared himself for an equal distribution of the public burdens. The revolution broke out. Before the decree relative to a patriotic contribution appeared, he made a voluntary present of 100,000 francs to the state. During the reign of terror, he retired to Meillant, where he was arrested, and did not obtain his liberty until after the 9th Thermidor. In the testimonies given in his behalf by the revolutionary committees, he was called the father and benefactor of suffering humanity. He returned to Meillant, where he established an agricultural society. No sacrifice was too great for him, and his vast fortune was scarcely sufficient for his enterprises. He died October 27, 1800, of the small-pox, lamented by the people, whose benefactor he had been.

CHARPENTIER, I. F. G.; a man who did much to improve the art of mining. He was born in 1738, and died in 1805. He was one of the professors in the mining academy at Freyburg, in Saxony.

CHART. See *Map*.

CHARTA MAGNA. See *Magna Charta*.

CHARTER. Every written document in the middle ages was called *carta*, *charta*, or *chartula*. There were several kinds, distinguished by different names, according to the nature of the subjects, or the materials on which they were written, or their internal or external form. Thus a kind of documents, common in England, are called *indentures* (*chartæ indentatæ* or *partitæ*), because originally written on one piece of parchment, which was afterwards cut asunder in an indented form, so that the fitting of the several parts to each other was considered necessary to prove their genuineness. (It was also customary to write a word, commonly the word *chirographum*, lengthwise between the two instruments, and cut it in two, whence such an instrument was called *chirographum*). This method has also been resorted to as a means of securing certificates of stock from being counterfeited: they are bound up, and then cut out, so that each number must fit the part belonging to it remaining in the book. *Chartæ per crucem* or *per punctum* signified, in the middle ages, charters signed only by a cross or point, for want of the knowledge of writing in the signer. The signification which is now usually affixed to the word *charter*, meaning a document relating to public law, the constitution of a state, or some parts of it, likewise originated in England, where the royal grants of certain privileges to towns or other corporations are styled *chartæ libertatum*, or *charters*. No European nation has set so high a value on documents of this nature, none has maintained its ancient rights and liberties with so much care and jealousy, as the English; for which reason the literature of this department is richer among them than in any other nation. Since 1783, when the *Doomsday-Book*, that celebrated account of landed property, or register and description of all feudal estates, in the time of William I. (commenced in 1080, and finished in 1085), was printed at the expense of parliament, and particularly since 1800, when a committee of parliament was appointed for the purpose of making search after the ancient documents that might be still extant, and causing them to be printed, much has been done by the English for promoting the publication of these monuments of their history and constitution. Rymer's collection (*Fœdera, Conventiones, Literæ et cujuscunque Generis Acta publica inter Reges Angliæ*, &c., 1704—35, 20 vols., folio; Haguc, 1745, 10 vols., folio) was, even in the first edition, very complete for a private collection, and a model in its kind: the second and part of the third edition have appeared under the direction and at the expense of parliament, and are far superior to the former. The first volume of this work appeared in 1816. According to the report of the committee, in 1821, 45 vols., folio, of ancient documents, had then been printed since 1801, comprising a period of more than 700 years, which shed great light on history and politics. The city of London is still in possession of two original charters, granted by William I. in the year 1066, one of which confirms the privileges which the city had received from Edward the Confessor, and the other bestows on it the fief of Gyddersdaur. They are handsomely written, in the Anglo-Saxon language, on two pieces of parchment, each six inches in length, by one in breadth, the former consisting of nine lines, the latter of three. The seals, though broken in pieces, are still attached to them, enclosed in silk bags. In France, the fundamental law of constitutional liberty, given by Louis XVIII., is called *Charte constitutionnelle*. In 1822, there was established in France a school of charters (*école des chartes*), to instruct young men in deciphering and explaining the charters of the middle ages, which are to be found in the French archives. There is, even since the revolution has destroyed so many documents, an immense mass of grants, charters, &c. written on parchment, many of great antiquity, in France. Mr Isambert has collected, in the preface to vol. 1. of his useful *Recueil des Anciennes Lois du Royaume*, accurate and extensive information respecting the catalogues, descriptions, places of deposit, &c. of charters.

CHARTER-PARTY is a contract under hand and

seal, executed by the freighter and the master or owner of a ship, containing the terms upon which the ship is hired to freight. The masters and owners usually bind themselves, the ship, tackle, and furniture, that the goods freighted shall be delivered (dangers of the sea excepted) well-conditioned at the place of the discharge; and they also covenant to provide mariners, tackle, &c., and to equip the ship complete and adequate to the voyage. The freighter stipulates to pay the consideration money for the freight; and penalties are annexed to enforce the reciprocal covenants.

CHARTRES (anciently *Autricum* and *Carnutum*); a city of France, in the Eure-and-Loire, 11 posts S. W. Paris, 18½ N. N. E. Tours; lon. 1° 13′ E.; lat. 48° 27′ N. The population amounts to 15,000. It is the see of a bishop. It is one of the most ancient towns of the country, and contains a cathedral, eight churches, an hospital, a public library of 25,000 volumes, and a cabinet of natural history. The streets are narrow, but some of the houses are uncommonly neat, and the cathedral is esteemed one of the most beautiful churches in the kingdom. It is situated on the Eure, over which is a bridge, the work of the celebrated Vauban. The principal trade is in corn, wine, and manufactured goods. Regnier, the poet, Nicole, Brissot, and Desportes were natives of this place.

CHARTREUSE, or GREAT CHARTREUSE; a famous Carthusian monastery in France, a little N. E. of Grenoble, situated at the foot of high mountains. It was founded in 1086. See *Carthusians*.

CHARYBDIS; a daughter of Neptune and Terra, whom Jupiter, on account of her insatiable rapacity, hurled into the sea, where she became a whirlpool, and swallowed up every ship that approached her. This mythological fiction was occasioned by the whirlpool in the Sicilian sea, which was the more dangerous to inexperienced navigators, because, in endeavouring to escape it, they ran the risk of being wrecked upon Scylla, a rock opposite to it. Charybdis is no longer dreadful to navigators, who, in a quiet sea, and particularly if the south wind is not blowing, cross it without danger. Its present names are *Calofaro* and *La Rema*. The earthquake of 1783 is said to have much diminished its violence.

CHASE, Samuel, one of the signers of the American declaration of independence, was born April 17, 1741, in Somerset county, Maryland. His father, a learned clergyman, instructed him in the ancient classics, and subsequently placed him at Annapolis as a student of law. He was admitted to the bar at the age of twenty. His talents, industry, intrepidity, imposing stature, sonorous voice, fluent and energetic elocution, raised him to eminence in a very few years. Having become a member of the colonial legislature, he distinguished himself by his bold opposition to the royal governor and the court party. He took the lead in denouncing and resisting the famous stamp act. His revolutionary spirit, his oratory and reputation, placed him at the head of the active adversaries of the British government in his state. The Maryland convention of the 22d of June, 1774, appointed him to attend the meeting of the general congress, at Philadelphia, in September of that year. He was also present and conspicuous at the session of December following, and in the subsequent congresses, during the most critical periods of the revolution. That of 1776 deputed him on a mission to Canada, along with doctor Franklin, Charles Carroll of Carrollton, and the reverend John Carroll, afterwards Catholic archbishop of Baltimore. It was Mr Chase who denounced to congress the reverend doctor Zubly, a delegate from Georgia, as a traitor to the American cause, and forced him to a precipitate and ignominious flight. He signed the declaration of independence with promptitude, and was an active and able member of congress almost throughout the war; at the end of which he returned to the practice of his profession. In June, 1783, the legislature of Maryland sent him to London, as a commissioner, to recover stock of the bank of England, and large sums of money which belonged to the state. He remained in England nearly a year, during which time he put the claim in a train of adjustment. There he passed much of his time in the society of the most eminent statesmen and lawyers. In the year 1791, he accepted the appointment of chief justice of the general court of Maryland. Five years afterwards, president Washington made him an associate judge of the supreme court of the United States. Political cases of deep interest having been tried when he presided in the circuit courts, and his conduct having given much displeasure to the democratic party, he was impeached by the house of representatives at Washington. The trial of the judge before the senate is memorable on account of the excitement which it produced, the ability with which he was defended, and the nature of his acquittal. A full report of it has been published. He continued to exercise his judicial functions, with the highest reputation, until the year 1811, in which his health failed. He expired June 19 of that year. Mr Chase led an eventful and important life, and established the character of a sagacious, erudite, and fearless judge, and a patriot little inferior in merit to any of his contemporaries.

CHASING, in sculpture; the art of embossing on metals. This is the art of representing figures, &c. in a kind of *basso relievo*, punched out from behind and sculptured on the front with small chisels and gravers.

CHASSEKI; the first sultana, or that wife of the Turkish emperor who presents him with the first prince. See *Turkey*, near the close of the article.

CHASTELER (John Gabriel) marquis of, grandee of Spain of the first rank, Austrian master of ordnance or general of artillery, military governor in Venice, descended in a collateral line from the dukes of Lorraine, was born in 1763, and received his first education at Metz, in the college de Fort. In 1776, he entered the Austrian service. After having served against the Turks (when he was severely wounded), he displayed his zeal for the house of Austria in the disturbances in the Netherlands. In 1796–97, he was employed in the negotiations of his court in Poland and Russia; was afterwards with Suwaroff in Italy, where he distinguished himself in several engagements with the French armies. In 1808, with Hormayr, he was the soul of the famous insurrection in the Tyrol, and all the political as well as military events which were connected with it. Meanwhile, the disaster at Ratisbon (q. v.) had taken place. Chasteler was obliged to retreat into the northern part of Tyrol. Napoleon, enraged at the surrender of 8000 French and Bavarians at Innspruck, issued a proclamation at Enns, in which "a certain Chasteler, who calls himself a general in the Austrian service, but who is the leader of a band of robbers, and the author of the murders committed upon the French and Bavarian prisoners, as well as the instigator of the Tyrolese insurrection," is declared an outlaw, and ordered to be brought before a court-martial, and shot within twenty-four hours. The emperor Francis commanded, that an order which violated all international laws, and which was the more censurable as Chasteler had taken particular care of the prisoners and the wounded, should be met by retaliation. The Bavarian army, under the command of the marshal duke of Dantzick, entered

Tyrol: Chasteler fearlessly encountered it; but his army was routed on the 13th of May. After the close of the war, he received several appointments, and, in December, 1814, was made governor of Venice, where he died, May 7, 1825. This general was of a chivalrous character and a cultivated mind; he spoke twelve languages, was as brave as he was generous, and was one of the noblest Walloons in the armies of Austria.

CHASTELET (Gabrielle Emilie Breteuil) marquise du; of an ancient family in Picardy; born in 1706. She was taught Latin by her father, baron Breteuil, and was as well acquainted with that language as madame Dacier; but her favourite study was mathematics. She had a sound judgment and much taste; loved society and the amusements of her age and sex; but abandoned all these pleasures, and, in 1733, retired to the dilapidated castle of Cirey, situated in a dreary region on the borders of Champagne and Lorraine. She embellished this residence, formed a library, collected instruments, &c. Cirey was often visited by the learned; for instance, by Maupertuis, John Bernouilli, &c. Here the marchioness learned English of Voltaire in the space of three months, and read with him Newton, Locke, and Pope. She learned Italian with equal rapidity. She also wrote an analysis of the system of Leibnitz, and translated Newton's *Principia*, with an algebraic commentary. Voltaire lived six years with her at Cirey. She then went to Brussels, to prosecute a lawsuit, which was terminated by an advantageous compromise, brought about by Voltaire. She also carried on a correspondence with the German philosopher Wolf until her death. Her *Traité de la Nature du Feu* obtained the prize of the Parisian academy of sciences, and is published in their collections. Her husband, the marquis du Chastelet Lomont, was high steward of king Stanislaus Leczinsky, at Luneville. The marchioness died at Luneville, in 1749.

CHATEAUROUX, Marie Anne, duchess of, of the illustrious house of Nesle, was married to the marquis de la Tournelle in 1734. Being left a widow at the age of twenty-three, she was received by her aunt, the duchess Mazarin, but soon lost this support. Her two sisters (mesdames de Vintimille and Mailly) had successively been in the possession of the heart of Louis XV., when the king conceived an ardent passion for her. She was made lady of honour to the queen, and afterwards duchess of Chateauroux, with a pension of 80,000 livres. By her persuasion, Louis XV. put himself at the head of the armies in Flanders and Alsace. He fell sick at Metz, his life was despaired of, and he was obliged to consent to the dismission of the duchess. She was received in Paris by Richelieu, who, after the king's recovery, effected her recall. Her triumph was complete, and she was promised the important post of superintendent of the dauphiness, when she died, in 1744. A collection of her letters appeared in Paris, 1806, in two small volumes.

CHATELET was anciently a small chateau or fortress, and the officer who commanded it was called *châtelain*. The word is a diminutive of *château*, formed from *castellum*, a diminutive of *castrum*; or from *castellatum*, a diminutive of *castellum*, castle. The term, in later times, has been applied to certain courts of justice, established in several cities in France. The *grand châtelet*, in Paris, was the place where the presidial or ordinary court of justice of the *prévôt* of Paris was kept, consisting of a presidial, a civil chamber, a criminal chamber, and a chamber of police. The term signified the same at Montpellier, Orleans, &c. When Paris was confined to the limits of the old city (*cité*), it could be entered only by two bridges (*le petit pont* and *le pont au change*), each of which was fortified with two towers,—a smaller one in the wall, facing the city, and a larger one before the bridge, towards the country. These two exterior turrets are the *grand* and *petit châtelet*. The tradition that the *grand châtelet* was built by Julius Cæsar, though adopted by some literati (e. g. La Marre, in his *Traité de Police*, vol. i. p. 87), is not well supported; but it is certain that the great tower was standing as early as the siege of the city by the Normans (885). The *grand châtelet* was the castle of the counts of Paris, and, therefore, the seat of all the royal courts of justice within the city and county, and also of the feudal court. The city had no proper jurisdiction whatever; its bailiff or provost (*prévôt*) was appointed by the king, and was president of the court (though only nominally, because he had no voice in the judgments), and, by virtue of his office, leader of the nobility. The office of provost of the merchants (*prévôt des marchands*; in other cities, *maire*), established before the former, and afterwards united with it for a time, was finally separated from it in 1388. The business of the *châtelet* was transacted by the deputies of the bailiff (*lieutenants*), of whom there were five, three for civil causes, one chief judge of criminal cases, and a lieutenant-general of police (*lieutenant-général de la police*). The latter, indeed, was minister of police for the whole kingdom, and the extent of his functions and power, particularly after the new arrangement, made by the celebrated d'Argenson, under Louis XIV., rendered him one of the most important officers of the state. In the *châtelet*, however, he held only the fourth place. The whole court of justice was composed of fifty-six counsellors, with thirteen state attorneys, and a multitude of subalterns, as sixty-three secretaries or *greffiers*, 113 notaries, 236 attorneys, &c. All these offices were sold. The place of the first officer of the civil chamber was rated at 500,000 livres; that of a notary at 40,000 livres. The *châtelet* was first in rank after the supreme courts (*cours souveraines*).

CHATELET, the marchioness of. See *Chastelet*.

CHATHAM; a town in Kent, England, on the Medway, united to the city of Rochester, of which it is considered a suburb; thirty miles S. E. of London. It is celebrated for its dock. An immense quantity of naval stores of all kinds are kept ready, in magazines and warehouses, arranged in such regular order that whatever is wanted may be procured without the least confusion. Above twenty forges are constantly at work. Anchors are made, some of which weigh five tons. In the rope-house, which is 700 feet in length, cables have been made 120 fathoms long, and twenty-two inches round. The dock-yard is about a mile long, the sail-loft 209 feet in length, and there are large store-rooms, one of which is 658 feet long. Here is an hospital for decayed seamen and their widows. The town is defended by fort Pitt, and very extensive fortifications called the *lines*; and, with the exception of Portsmouth, Chatham is considered the most regular and complete fortress in Great Britain. Population in 1831, 17,936.

Many towns and counties in America are called *Chatham*, after the great minister (q. v.); also straits, islands, &c.; for instance, *Chatham bay*, or Punjo bay, on the S. W. coast of East Florida, lon. 81° 30′ W., lat. 25° 30′ N.—*Chatham island*, in the South Pacific ocean; lon. 183° 10′ E., lat. 44° S.—*Chatham sound*, between the islands of Dundas and Stephens, on the W. coast of North America.—*Chatham strait*, a channel of the North Pacific ocean, on the coast of North America, between King George the Third's archipelago and Admiralty island, rather more than 100 miles in length from N. to S.

CHATHAM (William Pitt), earl of; one of the most illustrious statesmen of Britain. Integrity, disin-

interestedness and patriotism were united in him with indefatigable industry, promptitude, and sagacity. In eloquence he was never surpassed by any of his countrymen. His speeches were bold and sublime, and his influence over the minds of his audience was irresistible. His ease and dignity, fine voice and masterly gesticulation (in which even Garrick allowed him to be his superior), prepossessed his hearers in his favour, while the perspicuity and power of his arguments carried conviction. He was the son of Robert Pitt of Boconnoc, in Cornwall, born in 1708, and educated at Eton and Oxford. On quitting the university, he became a cornet in the blues, and, in 1735, represented the borough of Old Sarum in the house of commons, where he attracted universal notice. He was a powerful opponent of Sir Robert Walpole, who revenged himself by taking away his commission. In 1744, he received, on account of his patriotism, a legacy of £10,000 from the duchess of Marlborough, and, at a later period, a considerable estate was bequeathed him by Sir W. Pynsent. He had been appointed gentleman of the bedchamber to the prince of Wales, but resigned this place in 1745; became, in 1746, vice-treasurer of Ireland, paymaster-general of the army, and member of the privy-council. In 1755, Mr Pitt was turned out of office. In 1756, he was appointed secretary of state, but was dismissed in the same year, on account of his opposition to the Hanoverian policy of George II. The nation, however, was enthusiastically attached to him, and the public discontent was so loudly manifested, that he was appointed secretary of state again in 1757. His great mind now revealed its full force. His ascendency was complete over the parliament no less than in the ministry; he aroused the English nation to new activity, and, in the space of a few years, recovered the superiority over France, annihilating her navy, and stripping her of her colonies. France was beaten in the four quarters of the world. In 1760, he advised the declaration of war against Spain, while she was unprepared for resistance, as he foresaw that she would assist France. The elevation of England on the ruins of the house of Bourbon was the great object of his policy. But his plans were suddenly interrupted by the death of George II. George III. was prejudiced against Pitt by his adversary, the earl of Bute, a statesman of limited views. Pitt, therefore, resigned his post in 1761, only retaining his seat in the house of commons. On his retirement, his wife was created baroness Chatham. The thanks of the city of London were presented to him in a public address, an inscription in his honour was ordered to be placed on Blackfriar's bridge, and he was declared the palladium of England's liberty. In 1762, when Spain formally allied herself with France, Pitt urged the continuance of the war, by which both states would, perhaps, have been totally exhausted; but peace was concluded by the opposite party in 1763. Pitt uniformly supported the cause of the people. Foreseeing the separation of the American colonies from the mother country, if the arbitrary measures then adopted should be continued, he advocated, especially in 1766, a conciliatory policy, and the repeal of the stamp act. In the same year, he was invited to assist in forming a new ministry, in which he took the office of privy seal, and was created viscount Burton, baron Pynsent and earl of Chatham. In 1768, he resigned, as he found himself inadequately seconded by his colleagues. In the house of lords, he continued to recommend the abandonment of the coercive measures employed against America, particularly in 1774; but his warning was rejected, and, in 1776, the colonies declared themselves independent. In vain did he renew his motion for reconciliation in 1777; in vain did he declare the conquest of America impossible. April 7, 1778, though labouring under a severe illness, he repaired to the house, to attack the unjust and impolitic proceedings of the ministers towards the colonies. At the close of his speech, he fainted and fell backwards; he was conveyed out of the house, and afterwards removed to his country-seat at Hayes, in Kent, where he died, May 11. The parliament annexed an annuity of £4000 to the earldom of Chatham; his debts were paid, and he was honoured with a public funeral, and a magnificent monument in Westminster abbey. Another was erected, in 1782, in Guildhall. The sentiments of Lord Chatham were liberal and elevated, but he was haughty, and impatient of contradiction, and perhaps exhibited too marked a consciousness of his own superiority. His private was as estimable as his public character. To use the language of Lord Chesterfield, "it was stained by no vice, nor sullied by any meanness." No literary production of lord Chatham, except one or two short poems, had appeared, until the publication by lord Grenville, in 1804, of his "Letters" to his nephew, afterwards the first lord Camelford, which contain much excellent advice to a young man, clothed in easy and familiar language, and reflect equal honour on the author's head and heart.—In America, where lord Chatham was very popular, several places are called after his title. *Pittsburg* was so called from his family name.

CHATILLON, Congress of. The negotiations of the allied powers with Napoleon, begun at Frankfort, Oct. 10 and Nov. 27, 1813, but broken off, when, in consequence of their declaration of Dec. 1, the theatre of war was transferred to the heart of France, Jan. 8, 1814, were renewed in the small town of Chatillon-sur-Seine (chief place of *arrondissement* in the department *Côte d'Or*, with 3967 inhabitants), which had been declared neutral. Caulaincourt (duke of Vicenza), who had succeeded Maret (duke of Bassano) as minister of foreign affairs, was waiting, in that place, the answer of prince Metternich to his last letter. Lord Castlereagh conducted the negotiations in the name of Great Britain: besides him, there were three other British ministers present—lords Cathcart, Aberdeen, and Stewart. Count Razumoffsky was the minister of Russia, count Stadion of Austria, and baron William von Humboldt of Prussia.

CHATTERTON, Thomas, a youth whose genius, eccentricity, and melancholy fate have gained him much celebrity, was born at Bristol, in 1752, of poor parents. He had not yet learned to read, when an old French musical work happened to fall into his hands, the characters of which excited his curiosity. His mother now taught him to read from an old black-letter Bible. When eight years old, he entered a charity school at Colston, where the workings of his genius lay concealed under the appearance of melancholy and incapacity. At about ten years of age, he acquired a taste for reading, which became, from that period, a kind of ruling passion. His first work, a satire on a Methodist, who had abandoned his sect from interested motives, was written at the age of 11½ years. From this time his taste was decided. His melancholy gave way to vivacity and vanity, and dreams of glory, fortune, and immortality. He became particularly fond of antiquities and antique expressions. At the age of fourteen, he left school, and was articled as apprentice to a scrivener, at Bristol. His father, who died before his birth, had accidentally obtained possession of a number of old parchments of the 15th century. Many of these were consumed in the family; but several fell into the hands of Chatterton who,

after a few days, declared that he had discovered a treasure. He then procured glossaries of the old dialects of the country, and, in 1768, when the new bridge at Bristol was completed, he inserted a paper in the Bristol Journal, entitled *A Description of the Friars' first Passing over the Old Bridge, taken from an ancient Manuscript.* He was then but sixteen years old. Upon being questioned as to the manner in which he had obtained it, he finally asserted, that he was in the possession of several valuable old manuscripts, taken (as those above mentioned really were) from an old chest in the church. He had been engaged for a year in the composition of several poems, which he attributed to different ancient writers, particularly to one Rowley. In 1769, he ventured to write to Horace Walpole, giving him an account of his literary discoveries, and enclosing a specimen. Having received a polite answer, he wrote a second letter, informing Walpole of his situation, and requesting assistance to enable him to follow his inclination for poetry. Walpole, however, who in the mean time had discovered the poems to be spurious, returned them to Chatterton without taking any further notice of him. Discontented with his situation, he obtained a release from his apprenticeship by threatening to put an end to his life, and went to London. The favourable reception, with which he there met from the booksellers, inspired him with new hopes. He wrote for several journals, on the side of the opposition. He indulged the hope of effecting a revolution, and used to boast that he was destined to restore the rights of the nation. Failing to procure the rewards which he had expected for his exertions in favour of this party, he observed, that "he must be a poor author who could not write on both sides." On this principle he acted; but prosperity did not attend his dereliction from principle. His situation daily became worse. Although extremely temperate, and often voluntarily confining himself to bread and water, he was frequently destitute even of these necessaries. What he gained by his labours he spent, partly in presents for his mother and sisters, to whom he always held out the most splendid expectations, partly in public places of amusement, which he continued to visit under the appearance of easy circumstances. At last, after having been several days without food, he poisoned himself, in 1770, when not yet eighteen years old. His works were more extensively read as the public became acquainted with the history of his misfortunes. The most remarkable are the poems published under the name of *Rowley*, which he composed at the age of fifteen years. They display a vigorous and brilliant imagination, fertility of invention, and often a deep sensibility. Among the poems which he published under his own name, his satires deserve the preference. His prose writings are spirited. His works have been several times published. The best edition is that of 1803, in three volumes.

CHAUCER, Geoffrey, born in London, in 1328, was the son of a merchant, or, according to some writers, of noble extraction. He studied at Cambridge and Oxford. At the former place, he distinguished himself, at the age of eighteen, by his Court of Love, the oldest poem in English now extant. Having improved himself by travelling, he studied law for some time; but, becoming disgusted with this study, he repaired to court, where he became yeoman to Edward III. He was in high favour with the king, and particularly with his son, John of Gaunt, the celebrated duke of Lancaster. He was the confidant of the prince's love to his cousin, the duchess Blanche, and made their love, their marriage, the charms and virtues of the duchess, the themes of his songs. The duchess, however, soon found a rival in lady Catharine Swynford, whose sister Chaucer married. This alliance established him more firmly in the favour of the duke, by whose influence he was appointed to the most honourable offices. He was sent ambassador to Genoa; on which occasion he visited Petrarch. He was also sent as envoy to Charles V. of France, to negotiate the renewal of the truce, and a marriage between Richard, prince of Wales, and the king's daughter, in which mission, however, he was unsuccessful. As an adherent of the duke of Lancaster, he embraced the opinions of Wickliffe, and formed a close connexion with him; but neither business, nor the intrigues of the court, nor the theological controversies of the time, interrupted his poetical labours. His first poem was soon followed by Troilus and Cressida, the House of Fame, and other works, which were imitations of Boccaccio and other less celebrated authors. He seems particularly to have borrowed from the works of the Troubadours. These works bear the stamp of the corrupt taste, which, at that time, prevailed throughout Europe; but they are remarkable for correct delineation of character. He is considered as the inventor of English heroic verse. In 1382, the Wickliffites attempted, in spite of the opposition of the clergy, to elect a lord mayor of London of their own party. The disturbances, to which this dispute gave rise, occasioned a severe persecution of that sect on the part of the court, and Chaucer, who was hated by the people as the personal friend of Wickliffe, fled to Hainault, where he continued to receive his salary. The faithlessness of his agents, who discontinued their remittances, having obliged him to make a secret journey to England, he was discovered, arrested, and deprived of his post of comptroller of the customs, the duties of which had been discharged, in his name, by his deputy. He finally obtained his liberty by disclosing the designs of the party with which he had been connected. This conduct drew upon him a load of obloquy, while, at the same time, he was suffering from poverty. During his distresses, he wrote his Testament of Love, a sort of imitation of Boethius's *De Consolatione*, which he had translated in his youth. Chaucer's situation was once more changed with that of the duke of Lancaster, who, in the hope of ascending the Spanish throne, had entered into a second marriage with the daughter of Peter the Cruel; and though he had returned from Spain, in 1389, without having gained this object, yet he brought back considerable sums, which he employed in reviving his party at court. Four years later, on the death of his second wife, the duke married Catharine Swynford. Chaucer, now nearly connected with the royal family, regained the favour of the court, and was restored to his office. After the duke's death, he seems to have lived in retirement at Donnington castle, where the oak, in the shade of which it was said he loved to muse, long bore his name. There he wrote his most celebrated work, the Canterbury Tales, in verse. They are distinguished for variety of character and liveliness of description. Chaucer is the first writer who introduced the spirit and fictions of chivalry into poetry. His Sir Topaz, however, is written in ridicule of these fictions. He died in the year 1400. His works have been often printed.

CHAUCI; an ancient Teutonic tribe, dwelling east of the Frisians, between the Ems and Elbe, on the shore of the German ocean. They are also called, by different authors, *Cauchi, Cauci, Cayci, Chaci.* They are first mentioned in the wars of Drusus, who subjected them (*Dio Cass.* iv). Tacitus mentions them often.

CHAUDET, Antoine Denis, deserves, perhaps,

the first place among the French statuaries of modern times. Born at Paris, March 31, 1763, when the most corrupt taste in sculpture prevailed, he finished his career by works which display a degree of Grecian simplicity and truth which few modern artists have attained. In the twenty-first year of his age, he obtained the first prize of the academy. He then went to Rome, where he met the celebrated Drouais (q. v.). They were soon united by the ties of the most intimate friendship, and an equal enthusiasm for art. After his return to Paris, he became a member of the academy. His first work was a bass-relief under the peristyle of the Pantheon, representing the love of glory. The bad taste of the period could not justly estimate the grand and simple character of this work: it was reserved for later times to appreciate the masterly and sublime performance. Travellers may find in the museums of Luxembourg and Trianon several of Chaudet's finest works; among them, *La Sensibilité*, a young girl, astonished at the motion of the sensitive plant, which shrinks from her touch; the beautiful statue of Cyparissa, &c. Chaudet died at Paris, April 19, 1810.

CHAUDIERE; a river of Lower Canada, which rises on the borders of Maine, near the sources of the Kennebec, and, after a northerly course of about 120 miles, flows into the St Lawrence, six miles above Quebec. The banks of the river are generally high, steep, and rocky, and clothed with wood of indifferent growth. Three or four miles above its entrance into the St Lawrence, the river has a remarkable cataract, of about 120 feet perpendicular. These falls are considered not inferior to those of Montmorenci; the perpendicular height is only about half as great, but the quantity of water is vastly greater, the width of the river at the cataract being 360 feet. In some parts, sheets of water roll over the precipice, and fall, scarcely broken, to the bottom; while, in other places, the falling water dashes from one fragment of rock to another, with the wildest impetuosity, and forms a great mass of foam of a snowy whiteness.

CHAUDON, Louis Maieul, a learned Benedictine of the monastery of Cluny, which was secularized in 1787, born at Valensolles, May 10, 1737, wrote several works in defence of the Catholics, for which he received the thanks of the popes Clement XIII. and Pius VI., in two briefs directed to him. Among his works must be mentioned the *Nouveau Dictionnaire historique* (Avignon, 1766, in 4 vols.), of which ten editions have appeared, the ninth of which, in 1820, is less correct than the former ones. The tenth appeared at Paris in 1822, in twenty-five vols. Beside this, he wrote several other valuable works. He must not be confounded with his brother Maieul Chaudon, like himself a member of the academy of Arcadians in Rome, but belonging to the order of the Capuchins. The latter is the author of *La Vie du bienheureux Laurent des Brindes* (last edition, Paris, 1787).

CHAUFFEPIE, Jacques George de, a Calvinistic preacher, born at Lewarden, in Friesland, in 1702, preached at Flushing, Delft, and, in 1743, at Amsterdam, where he died in 1786. Besides several theological works, and translations from the English, he wrote a *Nouveau Dictionnaire historique et critique, pour servir de Supplément ou de Continuation au Dictionnaire historique et critique de Bayle* (Amsterdam and Hague, 1750—56, four vols. fol.). This work is founded on an English translation of Bayle, in ten vols., in which many additions had been made to the original. Of 1400 articles, which it contains, 600 are translated from the English without additions, about 280 are corrected and augmented, and the rest added by Chauffepié. He displays much learning, but, in genius, and style, falls far below Bayle. Chauffepié also wrote the life of Pope.

CHAULIEU, Guillaume Amfrye de, the French Anacreon, born at Fontenai in 1639, early distinguished himself by his genius, and gained the esteem of the dukes of Vendome, through whose influence he was appointed abbot of Aumale, and received, besides, several other benefices, so that his yearly income amounted to 30,000 livres. Pleasure was now the sole occupation of Chaulieu. He lived in the Temple, where many persons were assembled, who, like himself, united the love of pleasure with a taste for letters. In this society of Epicureans, though it was frequently visited by the grand prior of Vendome himself, decorum and morality were not very rigorously observed; but the pleasures of the table were heightened by poetical sallies. Chaulieu, a disciple of Chapelle and Bachaumont, distinguished himself among the rest by the charms of his wit and the gayety of his disposition, and received the surname of the *Anacreon of the Temple*. Like Anacreon, he devoted himself to love and poetry to the last. In a letter to the marquis de Lafare, he describes himself as vain, impatient, and impetuous, by turns active and indolent, fond of projects, and not less fond of repose. He died in his house in the Temple, in 1720, aged eighty-one. La Harpe justly remarks, that his verses display the negligence of an indolent mind, but, at the same time, good taste, and are free from all affectation.

CHAUMONT (department of the Oise), Treaty of; concluded March 1, 1814. The former coalitions of Russia, Prussia, Great Britain, Sweden, Austria, and most of the German princes, against Napoleon, in 1813, were principally directed to the deliverance of Germany, and the dissolution of the confederation of the Rhine. The principal object of the quadruple alliance concluded at Chaumont between Austria, Russia, Great Britain, and Prussia, was declared to be to destroy the preponderance of France, and to restore permanent peace to Europe, founded on the balance of power, and national independence. In case this end should not be attained by the negotiations already opened with Napoleon at Chatillon, the mutual obligations already existing between the allies to prosecute the war were to be confirmed. The four parties to the treaty of Chaumont agreed on their respective contributions for the accomplishment of their object, which, being punctually fulfilled, led to the peace of Paris, in 1814. This treaty was signed by prince Metternich, count Nesselrode, lord Castlereagh, and the Prussian chancellor of state von Hardenberg. The treaty of Chaumont forms an epoch in the history of Europe. It contains the diplomatic key to all the events which occupied the eyes of Europe in 1815. As it was, however, directed personally against Napoleon, and as France joined the allies at the congress of Aix-la-Chapelle, in 1818, for the purpose of maintaining the peace of Europe, it has not been renewed.

CHAUNCY, Charles, D. D., an American preacher, was the descendant of president Chauncy of Harvard university, a distinguished scholar and divine, who came to America on account of his religious opinions, in 1638. Dr Chauncy was born in Boston, January 1, 1705, and, after being graduated at Harvard, in 1721, studied divinity, and was ordained pastor of the first church in Boston, in 1727. Dr Chauncy was eminent for learning, independence, and attachment to the civil and religious liberty of his country. He was easily excited, and was plain and pointed in his invectives, but was greatly esteemed for his honesty, sincerity, and piety. He died February 10, 1787, in the eighty-third year of his age. His productions are numerous, consisting

of an extensive collection of sermons, a work entitled *A Complete View of Episcopacy*, of which he was a decided enemy, and several polemical publications.

CHAUSSEE, Pierre Claude Nivelle de la; a dramatic writer, born at Paris in 1692. His first work was a critique on the fables of La Motte. When La Motte advanced the paradox that verse is useless in the tragedy and ode, he was answered by Chaussée, in his *Epitre à Clio*, which is still esteemed. His first dramatical work, *La Fausse Antipathie*, written after he had passed the age of forty, was received with approbation. The following circumstance gave rise to the new species of drama which he introduced. The actress Quinault, perceiving a good subject for an affecting drama in a farce, proposed it to Voltaire, who declined the attempt. She then applied to Chaussée, who, at her suggestion, wrote *Le Préjugé à la Mode*. Thus the sentimental comedy (*comédie larmoyante*) originated from the farce. Chaussée then attempted tragedy, and wrote the unsuccessful piece *Maximien*, a subject which had already been treated of by Th. Corneille. His *Ecole des Mères*, and his *Gouvernante*, which followed, are still acted. He died in 1754. Voltaire says he is one of the first writers, after those of genius.

CHAUX DE FONDS, LA; the name of a village in the district of Vallengen, in the Swiss canton of Neufchatel. The valley that bears this name is unfit for agriculture, but rich in cattle, and carries on much trade in cheese. It is remarkable, as is also the neighbouring village of Locle, for its manufactures of watches and lace. La Chaux de Fonds has about 5800 inhabitants, among whom are upwards of 400 watch-makers, and 600 females that gain their living by making lace. About 40,000 gold and silver watches are annually made here, beside clocks. The village of Locle has about 5000 inhabitants. The village of Fleurier is the chief place for the trade in lace.

CHECK; a draft or bill on a banking house, to be paid, at sight, to the bearer. See *Bill of Exchange*.

CHEKE, Sir John; an eminent English statesman and cultivator of classical literature in the 16th century. He was born at Cambridge in 1514, and received his education at St John's college, in the university of that place. After having travelled on the continent, he returned to Cambridge, and was made regius professor of Greek, in which office he distinguished himself by introducing improvements in the pronunciation of that language. Bishop Gardiner, chancellor of the university, opposed these innovations, and a literary correspondence took place between the professor and the chancellor, which was, some time after, published at Basil, 8vo. In 1544, Cheke was appointed tutor to the prince of Wales, afterwards Edward VI., and he appears, likewise, to have assisted in the education of the princess Elizabeth. On the accession of Edward, he received a pension of 100 marks, was made provost of King's college, Cambridge, and obtained grants of considerable landed property. He soon after married, and, in 1547, retired from court to the university, in consequence of some disappointment, but was soon recalled, and remained a great favourite with the king to the end of his reign. In 1550, he was made gentleman of the king's bedchamber, the next year he was knighted, and, in 1553, he obtained the post of secretary of state. He was also a privy councillor. The death of his royal patron occasioned a revolution in his fortunes. Cheke was a sincere Protestant, and was deeply involved in the measures adopted for the reformation of the church of England; and, having had the imprudence to engage in the scheme for raising lady Jane Grey to the crown, he was, on its failure, committed to the Tower. After a few months, however, he was set at liberty, and, having obtained from queen Mary permission to travel, he went into Italy, and thence to Strasburg, in Germany. His conduct while abroad gave offence to the Catholic zealots in England, who procured the confiscation of his estates, on the pretext of his having exceeded the leave of absence which had been granted him. He was then obliged to support himself by giving lectures on the Greek language. In 1556, having been induced to visit Brussels (probably through the contrivance of his enemies), he was there arrested, by order of Philip II., then sovereign of the Netherlands, and sent prisoner to England. Powerful means were adopted to convert him to popery. The fear of death prevailed over his constancy, and he was induced to make a public abjuration of his former faith. His estates were not restored, but he received an equivalent for them from the queen, and he was much caressed by the heads of the Catholic party, who, however, with cruel policy, obliged him to sit on the bench at the trials of the unfortunate Protestants. It is a circumstance honourable to his character, that he appears to have keenly felt his degraded situation. He died of grief not long after, in September, 1557. Sir John Cheke published several small treatises, original and translated, chiefly relating to theology. He was also the author of many works preserved in manuscript. Among these is an English translation of the gospel of St Matthew, intended to exemplify his plan for the reformation of the English language, by banishing from it all words but such as are of Saxon origin.

CHELSEA, a parish in Middlesex, chiefly distinguished for containing a royal military hospital. The building was originally commenced by James I. as a theological college, but was left unfinished. On the restoration of Charles II., that king, wishing to erect a convenient hospital for the reception of sick, maimed, and superannuated soldiers, converted the unfinished buildings of the college to that use, and the hospital has retained the name of college ever since. It was founded by king Charles II., carried on by king James II., and finished in the reign of king William and queen Mary, by Sir Christopher Wren, in 1692. The whole expense of this structure amounted to £150,000, and the extent of the grounds is above forty acres. The number of in-door pensioners is 336, consisting of soldiers maimed or disabled in his majesty's service, or who have served for twenty years. They are provided with clothes, lodging, and diet, and have an allowance of eightpence a-week. The annual expense of the London establishment (including salaries, &c.) varies from £27,000 to £30,000 per annum. The allowance to the out-pensioners is five-pence a-day, and they always have a half-year's pension in advance. Their number is not limited by law, and at present amounts to 22,000. There are 400 sergeants, who have a shilling a-day allowed them. Connected with the hospital is a royal military asylum founded in 1801, under the auspices of the late duke of York, by parliamentary grant, for the education and maintenance of soldiers' children; towards the support of which institution the whole army contribute one day's pay per annum. Population of the parish in 1831, 32,371.

CHELTENHAM; a town of England, in Gloucester, on the Chelt; 94 miles N.W. London. It is celebrated for its medicinal waters, and, within a few years, has become a place of public resort, and was honoured with the residence of the royal family in the year 1788. About 4000 persons, during the summer, visit the waters, which are used as a laxative and restorative to invalids. It has a weekly market on Thursday. The water of these springs has no briskness or pungency, but is brackish, rather

bitter, and chalybeate. Its temperature is uniformly from 52° to 53° Fahr. The first effects of drinking these waters are some drowsiness, and sometimes headache, which ceases, however, even previously to the bowels being opened. A moderate dose acts promptly and decisively on the *primæ viæ*, without, however, producing any griping, or leaving languor or faintness after its operation. Population of town and parish in 1831, 22,942.

CHEMISTRY. By this name, the etymology of which is uncertain, we understand the science which teaches the nature of bodies, or rather the mutual agencies of the elements of which they are composed, with a view to determine the nature, proportions, and mode of combination of these elements in all bodies. *Natural philosophy*, or *physics*, examines the reciprocal influence of matter in masses. *Chemistry* treats of the mutual action of the integrant parts. In the former, the phenomena are produced by the general attraction or repulsion of bodies; in the latter, by minute combination or decomposition. With our present knowledge of matter and its laws, we cannot separate physics entirely from chemistry: one science cannot be studied without the other. Those artisans who first discovered the means of melting, combining, and moulding the metals; those physicians who first extracted vegetable substances from plants, and observed their properties, were the first chemists. Instead, however, of observing a philosophical method in their examinations; instead of passing from what was known to what was unknown, early inquirers suffered themselves to be led astray by astrological dreams, the fables of the philosopher's stone, and a hundred other absurdities. See *Alchymy*.

Until the year 1650, we find little worthy of notice in the history of chemistry. Rhazis, Roger Bacon, Arnaud de Villeneuve, Basilius Valentin, Paracelsus, Agricola, &c., observed some of the properties of iron, quicksilver, antimony, ammoniac, saltpetre. They discovered sulphuric, nitric, and other acids; the mode of rectifying spirits, preparing opium, jalap, &c., and of purifying the alkalies. Glauber was distinguished for the accuracy of his observations. He endeavoured to improve certain instruments; advised operators not to throw away any residuum, in performing experiments, as useless; discovered the salt which is called, from him, *Glauber's salt*, &c. Such isolated discoveries, however, could not form a complete science. Stahl appeared, and, although his theory was unsatisfactory and entirely gratuitous, and, as later observations have proved, erroneous, yet he laid the foundations of the chemical school of Berlin, which has produced a succession of eminent chemists. He was himself much indebted to the celebrated Becher, whose views he corrected and extended. He was sensible that the greater part of chemical phenomena might depend on a general cause, or, at least, on a few general principles, to which all combinations must necessarily be referred. He supposed that bodies contained a combustible element, which inflammable bodies lost by being burned, and which they could regain from other more inflammable bodies. This element he called *phlogiston*. The establishing of a hypothesis, which connected almost all phenomena with each other, was an important step. Boerhaave adopted Stahl's system, and contributed much to its general diffusion. He is the founder of philosophical chemistry, which he enriched with numerous experiments, in regard to fire, the caloric of light, &c. Although the principles on which those philosophers proceeded were false, yet the science was much advanced by their labours. It was reserved for Black, Priestley, Cavendish, Lavoisier, Bergmen, Schule, and Kirwan, to overturn Stahl's system, and substitute the pneumatic or antiphlogistic chemistry, the best history of which is to be found in Fourcroy's *Philosophie Chimique*, and his *Système des Connaissances Chimiques*. As soon as the composition of the atmospheric air was made known by Priestley, it was observed that combustible bodies, burning in contact with it, instead of losing one of their elements, absorbed one of the component parts of the air, and were thus increased in weight. This component part has received the name of *oxygen*, because many of the combustible bodies are changed by its absorption into acids. Oxygen now took the place of phlogiston, and explained the difficulties which beset the phlogistic theory. To Black we are indebted for the basis of our present knowledge of the theory of heat. His experiments were repeated, extended, and confirmed by Cavendish, who was the first to discover the composition of water, as also the properties of carbonic acid gas and hydrogen. Light and unity were introduced into chemistry by the new technical nomenclature adopted in 1787, by the aid of which all the individual facts are easily retained in the memory, since the name of each body is expressive either of its composition, or of its characteristic property. Twelve or fifteen terms have been found sufficient for creating a methodical language, in which there is no inexpressive term, and which, by changing the final syllables of certain names, indicates the change which takes place in the composition of the bodies. Lavoisier, Fourcroy, Guyton de Morveau, and Berthollet, were the authors of this felicitous innovation. The chemical terminology admits of nothing arbitrary, and is adapted not only to express known phenomena, but also any which may be hereafter discovered. It is the first example of a systematic and analytic language.

The commencement of the 19th century forms a brilliant era in the progress of chemistry. The galvanic apparatus of Volta presented to the experimenter an agent unequalled in the variety, extent, and energy of its action upon common matter. With this apparatus, Sir Humphrey Davy commenced a series of researches, which resulted in a greater modification of the science than it had ever before experienced. He proved that the fixed alkalies were compounds of oxygen with metallic bases, and thus led the way to the discovery of an analogous constitution in the alkaline earths. To the same individual the science is principally indebted for the establishment of the simple nature of chlorine, and for the investigation of iodine. Electric chemistry had its origin in the researches of this great man, in which line of discovery he has been followed by Mr Faraday, who is at present carrying on a series of experiments, that will, to all appearance, lead to the establishment of definite proportions in the electric properties of all the bodies in nature. The researches of Sir H. Davy concerning the nature of flame, resulting as they did in the invention of the miner's safety-lamp, afforded to mankind a demonstration of the utility of philosophy in contributing to the improvement of the arts of life.

But that department of chemistry, which has of late been most successfully investigated, relates to the definite proportions in which bodies unite to form the various chemical compounds. To establish the conclusions which have been arrived at, a multitude of exact analyses were requisite. These were accomplished principally through the labours of Wentzel, Vanquelin, Richter, Dalton, Guy-Lussac, Thenard, Berzelius, and Thomson; and have terminated in the establishment of the general truth, that, when bodies combine chemically and intimately with each other, they combine in determinate quantities; and that, when one body unites with another in more than one proportion, the ratio of the increase may be

expressed by some simple multiple of the first proportion. Upon this general fact, doctor Wollaston constructed the logametric scale of chemical equivalents—an invention which has contributed, in an eminent degree, to render our knowledge of the constitution of compounds precise, by introducing the sure basis of arithmetical relations, which, when fixed with accuracy, are not susceptible of change. The doctrine of definite proportions may, therefore, be regarded as having communicated to the principles of chemistry that certainty which has long been considered as peculiar to the mathematical sciences; and it is in the development of these important relations that the advancement of the science has been most conspicuous.—Among the still more recent improvements in chemistry may be cited the discovery of Dobereiner, relating to the power of platinum in effecting the combination of oxygen and hydrogen; the researches of Faraday, in which many of the gases have been reduced to the liquid form; the discovery of new compounds of carbon and hydrogen, and the singular fact, which they exhibit, of different combinations being established in the same proportions; the elucidation of the new compounds of chlorine with carbon; of the peroxide of chlorine; the hydriodide of carbon; the perchloric, iodous, fulminic, and other acids; the discovery of the real bases of silex and zircon, and that of the new principle, brome: add to these, that our knowledge of light and electricity has been greatly enlarged, and that the phenomena of electro-magnetism are altogether new, and it becomes strikingly obvious that chemistry is still a progressive science. "Nor can any limits be placed to the extent of its investigations. Its analysis is indefinite; its termination will have been attained only when the real elements of bodies shall have been detected, and all their modifications traced: but how remote this may be from its present state we cannot judge. Nor can we, from our present knowledge, form any just conception of the stages of discovery through which it has yet to pass."

Chemistry has two ways of becoming acquainted with the internal structure of bodies, *analysis* and *synthesis* (decomposition and combination). By the former, it separates the component parts of a compound body; by the latter, it combines the separated elements, so as to form anew the decomposed body, and to prove the correctness of the former process. These methods depend on a complete knowledge of the two powers, by which all bodies in nature are set in motion, viz., *attraction* and *repulsion*. Attempts have been made to distinguish the attraction of elementary particles from planetary attraction; the former being designated as *chemical affinity*: but nature has only one kind of attraction. The alternate play of attraction and repulsion produces a great number of sensible phenomena, and a multitude of combinations, which change the nature and the properties of bodies. The study of these phenomena, and the knowledge of these combinations, appertain to the department of chemistry. The history of a body must always precede its analysis. The mere examination of its form, its colour, its weight, and the place where it was found, &c., is often sufficient, by a comparison, to lead to a knowledge of its chemical properties. There is no science more extensive than chemistry, nor is it possible for one person to embrace it in its whole extent. To facilitate the study, it is considered in different points of view, and thrown into divisions and subdivisions, so that a person may devote himself to one department of it, although the method of observing, analyzing, and combining is the same in all, and although all the phenomena must be explained by the general theory, and refer to certain laws, of which a previous knowledge is requisite. These laws constitute what is called *philosophical* chemistry, which explains what is meant by the affinity of aggregation or cohesion, and by the affinity of composition, or chemical affinity. It treats of the phenomena of solution, saturation, crystallization, ebullition, fusion, neutralization. Chemical processes, by changing or modifying the properties of bodies, suggest to the observer important considerations on the changes of form, density, and temperature. Philosophical chemistry weighs these considerations. It shows, further, that affinity may be exerted, 1. between two simple bodies; 2. between a simple and a compound one; 3. between compound bodies; and, establishing the principle, that the same body has not the same affinity for all others, but attracts them unequally; it shows us the laws which determine this preference, and the circumstances which modify it; such as cohesion, mass, insolubility, elasticity, and temperature. It measures the degree of affinity, whether of simple or compound bodies. It observes the circumstances which aid or obstruct the play of attraction, and shows that two bodies will not act upon each other, unless one of them, at least, is in a fluid state; that bodies, even in a state of solution, act upon each other only at imperceptible distances; that two bodies, which have no perceptible affinity, may be made to combine by the interposition of a third; and, finally, that the peculiar properties of bodies are destroyed by their combination, and the compound possesses entirely new properties. Proceeding from these principles to the examination of bodies themselves, philosophical chemistry considers the effects of light, heat, and electricity; the nature of the simple and compound inflammable bodies; of air and water; the composition and decomposition of acids; the nature and properties of the salts; their relations to the acids; the calcination, solution, and alloying of metals; the composition and nature of plants; the characteristics of the immediate elements of vegetable substances; the phenomena of animalization; the properties of animal compounds, and the decay of organic substances. This is the sphere of philosophical chemistry, while it confines itself to general views.

According to the application of these general views, chemistry is divided into seven or eight branches, which we have yet briefly to survey. The study of the great phenomena which are observed in the atmosphere, and which are called *meteors*, constitutes *meteorological* chemistry. This explains the formation of the clouds, rain, mist, snow, waterspouts; the state of the atmosphere in relation to the hygrometer, barometer, and thermometer; the nature of the aurora borealis, meteoric stones; in short, all the chemical processes going on above the surface of the earth. *Geological* chemistry treats principally of the great combinations of nature, which produce volcanoes, veins of metals, beds of mineral coal, basalt, mineral waters, the enormous masses of salt and lime, the saltpetre in the bed of the Indus, the natron of the lakes of Egypt, the borax of the lakes of Thibet. The geological chemist endeavours to discover and explain the causes of deluges, earthquakes, the decrease of the waters on the globe, the influence of climate on the colour of animals and plants, on the smell of flowers, and the taste of fruits. In these general views, he needs the aid of natural philosophy and physics. Chemistry, in its application to natural history, is divided in the same manner. There is a chemistry of the mineral kingdom, which comprises metallurgy and assaying, and the examination of all inorganic substances, as stones, salts, metals, bitumen, waters; a chemistry of the

vegetable kingdom, which analyzes plants and their immediate products; and a chemistry of the animal kingdom, which studies all substances derived from living and dead animals. This last is subdivided into *physiological* chemistry, which considers the changes produced in animal substances by the operation of life; *pathological* chemistry, which traces the changes produced by disease or organic defects; *therapeutic* or *pharmaceutic* chemistry, which teaches the nature and preparation of medicines, shows the means of preserving them, and exposes the pretensions of empirics; *hygietic* chemistry, which acquaints us with the means of constructing and arranging our habitations, so as to render them healthy, of examining the air which we must breathe in them, guarding against contagious diseases, choosing wholesome food, discovering the influence of occupation, fashion, and custom on the health. *Agricultural* chemistry treats of the nature of plants and soils, and the laws of production. Sir Humphrey Davy first gave it the character of a science. It treats, 1. of the general powers of matter which have any influence on vegetation, of gravity, cohesion, chemical affinity, heat, light, electricity, the elements of matter, especially such as are found in vegetables, and the laws of their composition and arrangement; 2. of the organization of plants, their structure, the chemical composition of their organs, and the substances found in them, &c.; 3. of soils; 4. of the nature of manure.

Chemistry, finally, exerts an influence on the routine of domestic life, and on the arts. It simplifies and regulates the daily offices of the housekeeper; renders our dwellings healthy, warm, light; assists us in preparing clothing, food, drink, &c.: it teaches the best way of making bread; preparing and purifying oils; of constructing bakehouses, ovens, and hearths; of bleaching and washing all kinds of stuff; of producing artificial cold, &c. The application of chemistry to the arts and manufactures is, however, still more important and extensive. Here its aim is to discover, improve, extend, perfect, and simplify the processes by which the objects to be prepared may be adapted to our wants. We close our remarks with the observation, that a knowledge of chemistry may frequently be useful in judicial proceedings, in exposing crime; e. g., in cases of poisoning, counterfeiting coins and written documents, &c.

Chemical Classification and Nomenclature. The chemist finds a small number of bodies, from which only one kind of matter can be obtained, in the present state of his knowledge, and by the instruments and agents which he now has at his disposal. On the other hand, there is a large number of bodies, from which he obtains several kinds of matter. The former he calls *elements* or *simple bodies*; the latter, *compound bodies*. The number of simple bodies now known is fifty-three: that of the compounds is much greater, and might, at first, appear to be infinite, since not only a difference of elements, but even a difference of the proportions in which they are combined, makes an essential difference in the properties of the compound. It is, however, much less than would be supposed, and even less than the number of possible combinations of simple bodies. Twelve of the simple bodies are oxygen, iodine, chlorine, bromine, fluorine, hydrogen, boron, carbon, phosphorus, sulphur, azote, and selenium; and forty-one are metals (q. v.). The five first are called *supporters of combustion*, because they combine with the others, producing a disengagement of heat and light, and *acidifying principles*, because they are also capable of producing acids by a similar combination. The forty-eight others are called *simple combustibles*, because their union with the supporters of combustion, above mentioned, is a real combustion. Compound bodies, as has been observed, are not so numerous as might be supposed. They result, 1. from the combination of oxygen, or one of the other simple supporters of combustion, with one of the simple combustibles; such are the acids: 2. from that of a simple body combined with oxygen, with another similar compound; such are the salts: 3. from that of two, three, rarely four, simple combustibles with one another: 4. from that of oxygen with hydrogen and carbon, forming vegetable matter: 5. from that of oxygen with hydrogen, carbon, and azote, forming animal matter. Combustibles combined with the simple supporters of combustion are sometimes called *burned bodies*; from the number of their elements, they are also called *binary compounds*. When their taste is acid, and they have the property of reddening vegetable blues, they are termed *acids*. If they are not acid to the taste, and have the property of turning blue what has been reddened by acids, they are distinguished by the termination *ide*, as *oxide, chloride*, &c. If only one of the latter class is formed, that is, if the supporter of combustion will unite with the combustible in only one proportion, we call this compound simply the *oxide, chloride*, &c., of the combustibles; as, *oxide of carbon*. If they unite in several proportions, we call the first, or that which contains the smallest proportion of oxygen, &c., *protoxide*, &c.; the second, *deutoxide*; the third, *tritoxide*. The highest is also called *peroxide*. So, if only one acid is formed, we designate it by the name of the combustible, with the termination *ic*. Thus carbon with oxygen forms *carbonic* acid. If several are formed, that which contains the larger proportion of the acidifying principle is designated by the termination *ic*, and that which contains less, by the termination *ous*. Thus sulphur forms *sulphuric* acid and *sulphurous* acid. If there are still intermediate compounds, we annex *hypo* (signifying *less*), to designate a lower degree of acidity. Thus we should have *sulphuric, hyposulphuric; sulphurous, hyposulphurous*. In the acids and oxides, chlorides, &c., the combustible is called the *base*. When the base is the same, the peroxide, &c., always contains less oxygen, &c., than the lowest acid. For the names of compounds of two binary burnt bodies, no rules have been adopted to express the union of two oxides, two acids, or an acid with a non-metallic oxide. But those formed of acids and metallic oxides are called *salts*, and their individual names are formed by changing the termination of the acid and placing it before the name of the metal; the termination *ous* is changed into *ite*, and *ic* into *ate*; sulphurous acid with the oxide of tin would form *sulphite of tin*; sulphuric acid and tin, *sulphate of tin*. If the same acid combines with more than one oxide of the same metal, then we prefix the characteristic of the oxide to the name of the acid; thus sulphuric acid, combined with the protoxide of iron, forms the *protosulphate*, with the peroxide, the *persulphate*, of iron. Other substances have also the property of uniting with acids, neutralizing them, and forming compounds analogous to salts. There are no general rules for the names of these compounds; but the substances themselves are called *salifiable bases*. The rules of nomenclature, in regard to the combination of the combustibles, vary:—1. If the constituents are metals, they form *alloys*. 2. If the compounds are solid or liquid, and formed of a metallic and a non-metallic combustible, we give to the latter the termination *uret*; as, carbon with iron forms *carburet of iron*. If both are non-metallic, the termination *uret* may be attached to either; as, *phosphuret of sulphur*, or *sulphuret of phosphorus*. 3. If the compound is gaseous, we name the gas or one of the gases, if it

is composed of two, and join the other component as an adjective; as, *phosphuretted hydrogen*. See the appended Chemical Chart by Mr William Grier.

CHEMNITZ, the principal manufacturing town in the kingdom of Saxony, in the department of the Erzgebirge, on the river Chemnitz, is well built, and contains 1000 houses, with 16,000 inhabitants, amongst whom are 1197 master-weavers, and 860 journeymen and apprentices. The principal manufactures are white and printed calicoes, ginghams, handkerchiefs, and various articles used for bed quilts. Of twelve cotton factories, founded about the middle of last century, several employ from 300 to 500 workmen. Forty spinning-mills, in the town and its environs, manufacture upwards of 1,000,000 pounds of yarn annually. The manufacture of cotton hose has been brought to very great perfection, and they are exported in large quantities to the United States and South America, besides furnishing most of the European markets, through the fairs of Leipsic, Frankfort, and Brunswick. Within a few years, they have even been sent to England, strange as this may sound. They are manufactured in the neighbouring villages.

CHEMNITZ, Martin, a distinguished Protestant theologian of the sixteenth century, rose, by his extraordinary talents and profound knowledge, from low circumstances to a high degree of celebrity. He was born at Truenbrietzen, in the Mark of Brandenburg, Nov. 9, 1522, of poor parents; received his education at Magdeburg and Frankfort on the Oder, and, in 1544, became a schoolmaster in Writzen on the Oder, to obtain the means of continuing his studies at Wittenberg. By the advice of Melancthon, he applied himself to mathematics and astrology. In 1550, he became librarian of duke Albert of Prussia. He then wrote his *Loci theologici* (edit. Polycarp. Leyser, Frankfort on the Maine, 1591, fol.), a valuable commentary on Melancthon's system of dogmatics. Being invited to Brunswick, as minister, he attacked the Jesuits in his *Theologiæ Jesuitarum præcipua Capita* (Leipsic, 1562), and, when the council of Trent thought itself assailed in this work, he wrote his *Examen Concilii Tridentini* (best edit. 1707, fol., Frankfort on the Maine), a work of great historical value. He adhered to Luther's doctrine concerning the eucharist, wrote on this subject, composed the *Corpus Doctrinæ prutenicæ* for the Lutherans, and gradually became so implicitly attached to the Lutheran doctrine, that his efforts in support of it contributed to check the progress of theological science. He died, April 8, 1586, at Brunswick. He was the author of a great number of works besides those already mentioned.—His grandson, Philip Bogislav von Chemnitz, born in 1605, a soldier in the Swedish service, wrote the celebrated work, *De Ratione Status in Imperio nostro Romano-Germanico*, &c. *auct. Hippolito a Lapide* (1640, 4to, and 1647, 12mo), which did more injury to the interests of the emperor than the loss of many battles. He then became Swedish historiographer, and wrote a history of the Swedish and German war (1648 and 1653). He died at his estate near Hallstadt, in Sweden, in 1678.

CHENIER, Marie Joseph de, born, Aug. 28, 1764, in Constantinople (where his father, Louis Chénier, known as the author of valuable works on the Moors, Morocco, and the Ottoman empire, was consul-general), went, when very young, to Paris, served as an officer of dragoons, left the service, and devoted himself to literary pursuits in Paris. After an interval of three years, he published his Charles IX., which may be considered as a monument of the taste prevailing in France at the beginning of the revolution, and is not without poetical merit. Chénier, by flattering the passions of the people, soon gained great popularity. His *Henri VIII.*, *La Mort de Calas*, and *Caius Gracchus*, were received with great applause. He was chosen a member of the convention, where, for a considerable time, he belonged to the party of the most violent democrats. This spirit appears even in his *Fenelon* and *Timoleon*, published in 1793 and 1794. In the last years of his life, he was engaged in preparing a history of French literature. His discourses at the Athenæum, in Paris, in 1806 and 1807, contain the history of the French language, and of the different departments of poetry and prose, down to the times of Francis I. In an introduction, published in 1806, he explained the plan of the work, together with the principal results of his researches. (See his *Fragments du Cours de Littérature, fait à l'Athénée en* 1806 *et* 1807, &c., Paris, 1808). Chénier also treated of the characteristic features of the principal works in French literature, from 1788 to 1808, in his *Tableau historique de l'Etat et des Progrès de la Littérature Française depuis* 1789. In his last piece on the decennial prizes, he maintained that the prize promised for the best didactic work was due to one of his former enemies. His criticism on La Harpe's *Lycée* is the most correct and impartial view which has been given of that work. He died Jan. 11, 1811.

CHERBURG, or CHERBOURG; a seaport of France, on the Channel, in the department of *La Manche* (the Channel); sixteen leagues N. St Lo, thirty-four W. N. W. Paris; lon. 1° 37′ 3″ W.; lat. 49° 38′ 30″ N.; population, 15,600. It has a commercial court, an exchange, a school of navigation, and a learned society. It is situated at the bottom of a large bay, between cape Barfleur and cape La Hogue. The building of small vessels and the manufacture of woollen stuffs form the principal employment of the inhabitants. This port has always been considered, by the French, as an object of great importance in the navigation of the English channel and immense sums have been expended in the erection of piers, deepening and enlarging the harbour, and erecting fortifications. After the peace of 1783, the French government determined to make Cherburg a great naval depot, and in different attempts before 1808, expended more than £2,000,000 in constructing a vast bulwark to break the water, rendering the road a safe anchorage. Afterwards, under Napoleon, a basin was formed, 1000 feet long and 770 wide, occupying eighteen acres, having a depth of fifty feet, and capable of containing fifty sail of the line. In addition to this, a wet dock has been constructed of equal dimensions. The cost of the basin and dock was nearly £5,000,000, with the expense of improving the roads. The mud, however, already begins to accumulate in the basin. The current, if the tide sets in, is so strong, that sometimes ten or twelve cables are necessary to hold a vessel. Napoleon's views respecting Cherburg, as given in count Las Cases' Journal, are very interesting.

CHERIBON; a principality of Java, on the N. coast; lat. 6° 46′ S.; lon. 108° 35′ E. It is divided into nine districts, and contains about 90,000 inhabitants, besides strangers. This country is divided between two princes, both of whom are feudatories of the Dutch East India company. The productions are coffee, timber, cotton yarn, areca, indigo, sugar, and also a little pepper: this last article formerly grew here in such abundance, that, in the year 1680, the bhar, of 375 pounds, was paid for at the rate of no more than ten Spanish dollars. The rhinoceros is seen on the hills and in the forests in this district. The horses are small and well made, but vicious.

Cheribon, *Sheribon*, or *Tcheribon*; a town in Java, capital of the principality of the same name, 170 miles E. Batavia. It is situated at the bottom of a

deep bay, and was formerly a station of some importance. 25,000 inhabitants.

Cheribon Reef; a reef in the East Indian sea, near the north coast of Java; lat. 6° 9′ S.; lon. 108° 34′ E.

CHEROKEES or TSULLAKEES, the more proper name. See *Indians.*

CHERONEA. See *Chæronea.*

CHERRY. The cherry is a fruit of the prune or plum tribe, the original stock of which is the wild cherry (*prunus cerasus*). The gradual effect of cultivation on the cherry has been the production of several kinds, which, both in size and flavour, greatly exceed the fruit of the parent stock. The kinds that are best known are the May-duke, white-heart, and black-heart cherries.—The trees are propagated by grafting them usually upon the stocks of wild black and red cherry-trees, which are reared for that purpose. This agreeable fruit is eaten fresh or dried. It is sometimes preserved with sugar as a sweet-meat, made into jam, used in the preparation of the liquor called *cherry-brandy,* and made into wine. From wild black cherries the Swiss distil an ardent spirit, by the sale of which to the French and Germans, they derive considerable profit.—The wood of the cherry-tree, which is hard and tough, is much used, particularly by turners and cabinet-makers, in many places, for the manufacture of chairs and other furniture. The gum that exudes from the bark is, in many respects, equal to gum arabic, and is considered very nutritive. Hasselquist informs us that, during a siege, more than 100 men were kept alive for nearly two months, without any other sustenance than a little of this gum, which they occasionally took into their mouths, and suffered gradually to dissolve.

CHERRY-LAUREL. The cherry-laurel (*prunus lauro-cerasus*) is remarkable only as producing the celebrated laurel-water. This is a most powerful poison, the strength of which (like that of peach-kernels, bitter-almonds, cherry-leaves, &c.) depends upon the presence of prussic acid, now so well known. Laurel-water is obtained from the leaves and flowers, or the leaves only, of this plant, by distillation, and was formerly much used, and much dreaded, as a poison. Of late years, it has gone out of use. The German *kirschwasser* is a strong spirit, possessing the same properties, in a less degree, as do *noyau,* and other similar cordials, which should all be used with great caution.

CHERSON, capital of the Russian government of Cherson, on the Dnieper, about sixty miles from its mouth, formerly the chief naval station on the Black sea, founded in 1778, is well fortified, and contains about 2000 houses, partly of stone, with 20,000 inhabitants. The city consists of four parts:—1. the fortress, with a church, a mint, an arsenal, and a cannon foundery; 2. the naval office, with extensive naval magazines and dock-yards; 3. the Grecian suburb, with a large warehouse; and 4. the suburb for soldiers. The naval office has been transferred to Nikolajev (at the confluence of the Ingul with the Bug), founded in 1789, the situation of which is more convenient and healthy. The harbour is annually entered by 400 Greek boats, besides several Austrian and French vessels. Wherever large rivers have but a slight descent towards their mouths, a great quantity of mud accumulates, which renders the bed gradually shallower, and, finally, rises above the surface of the water, forming morasses and islands, which leave a narrower bed for the stream. Such an accumulation takes place more rapidly, if two rivers of considerable size, like the Dnieper and Bug, empty into the same bay. A deep bed should, therefore, be dug and embanked for the united rivers, which will be kept free by the action of the current, at least for some time. This was overlooked by Potemkin, when he formed the plan of this city; and large vessels are, therefore, obliged to discharge part of their cargoes in the harbour of Oczakow, which has seventeen feet of water; and those which are outward bound complete their cargoes there. In 1823, however, the bed of the Ingul, which discharges its waters into the Black sea, was deepened to 18½ feet, so that, in 1826, a ship of 110 guns could be launched at Nikolajev.

The province of Cherson or Nikolajev (containing 25,500 square miles, and 371,000 inhabitants) is a dry heath, rising gradually towards the south, containing rich meadows here and there, and, along the rivers, about eighteen limens, or marshy lakes. The soil along the shores is everywhere impregnated with iron, and produces salt plants in abundance. It is, therefore, suitable for raising sheep. The climate, in summer, is hot; in winter, cold. The mulberry-tree, which loves a soil impregnated with salt, thrives here luxuriantly; but the inhabitants do not turn it to advantage by the cultivation of silk-worms: agriculture is yet in its infancy here. In 1787, the emperor Joseph and the empress Catharine II. met at Cherson, and, amid the splendid festivities of that occasion, formed an alliance against the Porte. The tomb of Potemkin is in the city, and that of Howard a few miles from it. The cities of Odessa and Oczakow, and the ruins of Olbia, at the mouth of the Bug, are in the government of Cherson.

CHERSONESUS (*Greek;* a peninsula). This name has been given to several peninsulas; as, 1. the Cimbrian chersonesus (*chersonesus Cimbrica*), now *Jutland,* &c. (see *Cimbri*); 2. the Taurian chersonesus (*ch. Taurica,* also called *Magna*), the peninsula formed by the Black sea and the sea of Azof—the Crimea; 3. the Thracian chersonesus (*ch. Thracica,* or merely *Chersonesus*), the great peninsula in Thrace, now the peninsula of the Dardanelles.

CHERUB, in the Scriptures; an angel of the second choir of the first hierarchy. *Cherubim* is the Hebrew plural of *cherub,* as *seraphim* is of *seraph.* The former signifies, *as children;* the latter, *as flames of fire.* The church has assigned to them their rank in the heavenly hosts. Painters and sculptors commonly represent the cherubim by a child's head, between wings. Raphael's paintings are beautifully adorned with these lovely creations of fancy.

CHERUSCI; the most celebrated German tribe among the Istævones. They inhabited both sides of the Hartz mountains, between the south-western part of the Thuringian forest, where the Catti were their neighbours, and the Saale. Drusus, on his retreat from the Saale to the Rhine, passed through the southern part of their country. But, in advancing from the territory of Paderborn, over the Weser, towards the Elbe, he took his course through the northern part. Here the Aller seems to have been their northern and eastern boundary. They also possessed some territory on the west bank of the Weser. Their national league comprised all the tribes between the Weser, the Rhine, and the Lippe—the Cattuarii, Ansibarii, Dulgumnii, Marsi, Chamaveri, &c. The Romans first became acquainted with the Cherusci in the year 10 B. C., when Drusus forced his way as far as the Weser, but, for want of provisions, was obliged to return. In the following year, he advanced from the Weser towards the Elbe, on the north side of the Hercynian forest, through the midst of the Cherusci. At that time, they were not very formidable. In the year 7 B. C., they even entered into an alliance with the Romans, and served in their armies. But when Varus attempted to

make them tributary to Rome, and subject them to the Roman laws, they revolted. Varus, being decoyed by them into the forest of Teutoburg, in the year 9 A. D., was destroyed, with his whole army, in a battle which lasted three days. (See *Arminius* and *Germania*.)—Upon this, the Cherusci became the chief object of the attacks of the Romans. Germanicus (q. v.), victorious over the Marsi and Catti, marched against the Cherusci, whose leaders, Segestus and Arminius (the latter of whom had carried off the daughter of the former), were at war with each other. Segestus, pressed by Arminius, called Germanicus to his aid, who delivered him, indeed, from his danger, but was obliged to return, after several campaigns, without having obtained any permanent advantages. By their last successes, the Cherusci had become very powerful. Their alliance with the Lombards and Semnones, who had renounced the Marcomannic confederacy, and the victory of Arminius over the Marcomanni under Maroboduus, raised the Cherusci to the first rank among the German nations. But, after the assassination of Arminius (21 A. D.), new disturbances broke out among them. They committed the supreme command to Italicus, the last survivor of the family of Arminius, but soon after expelled him. The Lombards restored him to his rights and dignity, after a long and destructive war with the Cherusci, who, abandoned by their allies, were now confined to the territory between the Saale and the south side of the Hercynian forest. In the third century, they, with their former allies, were swallowed up in the great Frankish confederacy, and no longer appear as a distinct people.

CHESAPEAKE BAY; a spacious bay of North America, in the states of Virginia and Maryland. Its entrance is between cape Charles and cape Henry, sixteen miles wide; and it extends 190 miles to the northward, through the states of Virginia and Maryland, dividing them into two parts, called the *eastern* and *western shores*. It is from seven to twenty miles broad, and generally as much as nine fathoms deep; affording many commodious harbours, and a safe and easy navigation. It receives the waters of the Susquehanna, Potomac, Rappahannoc, York, and James rivers, which are all large and navigable.

CHESELDEN, William; a celebrated English surgeon and anatomist. He was born in Leicestershire, in 1688, and, after a common school education and some medical instruction in the country, he went to London to prosecute his studies. At the age of twenty-two he began to give lectures on anatomy, and, in 1711, he was chosen F.R.S. In 1713, he published a treatise on the Anatomy of the Human Body, 8vo, long esteemed a favourite manual of the science. He continued to read his lectures for more than twenty years, during which he gradually rose to the head of his profession. In 1723, he published a Treatise on the High Operation for the Stone. Cheselden, who was a very dexterous and successful operator, afterwards added to his reputation by practising what is termed the *lateral* method of operating for the stone, since generally adopted. A peculiar operation, which he performed on a youth of fourteen, who had been blind from his birth, and who obtained his sight by means of it, attracted much notice; and, in 1728, he published an account of it in the Philosophical Transactions. In 1733 was published his Osteography, or Anatomy of the Bones, folio, consisting of plates and short explanations, a splendid and accurate work. Cheselden obtained, in 1737, the appointment of chief surgeon to Chelsea hospital. This situation he held till his death, which took place at Bath, April 10, 1752, in consequence of a fit of apoplexy. Besides the productions already mentioned, he published a translation from the French of Le Dran's Surgery, and several anatomical and surgical papers in the Philosophical Transactions. The private character of Cheselden was generally respectable; but he was not exempt from faults and foibles. Among these was a predilection for pugilism, and a degree of vanity which rendered him more ambitious of being thought a skilful architect or coachmaker than a good anatomist. He was, however, humane and liberal, and was much esteemed by Pope and other literary men with whom he was acquainted.

CHESS; the most celebrated and general of all sedentary games. One of the greatest charms of chess lies, no doubt, in the circumstance, that, whilst man is everywhere surrounded by chance, in this game, as generally played, he has entirely excluded it, except that it must be decided by chance which of the two players shall begin. The game affords so much variety, so much scope for calculation, so many opportunities to exhibit foresight and penetration, that it has been held in great esteem by all nations acquainted with it, and all persons who have conquered the difficulties of learning it. The Mohammedans except chess from the law against gambling. Whilst this game affords enjoyment worthy of mature minds, it is an excellent exercise for the young, as it teaches patience and circumspection, strengthens the judgment, and encourages perseverance in a plan affording a prospect of eventual success, though, at the moment, the situation of things may appear very critical. The Chinese pretend to have known it 200 years previous to our era. It was brought, in the sixth century, from India to Persia, whence it was spread by the Arabians and the crusaders all over the civilized world. It is most commonly played in Asia. In fact, its whole composition and its name prove its Asiatic origin. In Sanscrit, it is called *schthrantsh*, a word which is believed to indicate the most important component parts of an ancient Eastern army—elephants, infantry, sithed waggons, and horses. But this name was supplanted by the Persian term *shah* (king), which the game has retained, more or less corrupted, in all languages.

Generally, chess is played by two persons upon a board, the same as that used in draughts or chequers, containing sixty-four squares. The board must be so placed, that each player has a white square at his right hand. The squares are named from the pieces, viz.; that on which the king is placed is called the *king's square*; that on which the king's pawn is placed, the *king's second square*; that before the pawn, the *king's third square*; the next, the *king's fourth*; and so on with all the pieces of each side. Each player has eight pieces and eight pawns. In placing the pieces, the ancient rule is to be followed—*servat regina colorem* (the queen maintains the colour)—that is, the black queen is to be placed on the black square, in the middle of the line next to the player; in a similar way, the white queen on the white field. On the side of the king and the queen stand the bishops; then follow the two knights; and last, the rooks or castles. The object of the game is, to bring the adversary's king into such a situation that he cannot move, which is called *checkmating*. The king can never be taken. The play ends with a checkmate.

It is not uninteresting to consider the different names which the pieces have received in various countries. In the East, the queen is called by the more proper name of *vizier*, or *general*. The bishops are called, in Germany, *runners*; and in France, *fools* (*fous*). These were, originally, elephants, with giants on them. The knights are called, in German, *leapers*. The castles were, originally, *war-chariots*, which is also indicated by the word *rook*, from the

Indian *roch*, or *roth*. With the old Germans, the pawns, now called *peasants*, were styled *Wenden* (Vandals), a tribe despised by the Germans. Don John of Austria had a room, the floor of which was made like a chess board. On this he played with living persons.

The peasants of a German village, Stropke, or Strobeck, near Halberstadt, for about 300 years, have been distinguished as chess-players. The reason for this is doubtful. The most probable opinion is, that a certain bishop, who lived among them, made them acquainted with this game, and freed them from several taxes, on condition that they would continue to practise it. Numerous anecdotes show how much the game of chess can absorb the mind. The elector of Saxony, John Frederic, was taken prisoner in the battle of Muhlberg, by the emperor Charles V., and was playing at chess with his fellow prisoner, Ernest of Brunswick, when it was intimated to him that the emperor had sentenced him to death. He paused for a moment, to remark on the irregularity of the proceeding, and immediately resumed the game, which he won, and expressed, in a lively manner, the pleasure which he derived from his victory. Charles XII. of Sweden played at chess when he was so closely besieged in the house near Bender, by the Turks. Al Amin, caliph of Bagdad, would not be disturbed in chess-playing when his city was carried by assault. Frederic the Great loved chess much. Napoleon did not play it particularly well.

Among the most famous players and writers on the game are, a duke of Brunswick, named *Augustus*, who, in the 17th century, published, under the name of *Selenus*, an Introduction to the game (1616, 4to), now very rare; Philidor, a Frenchman, who was particularly distinguished in London, in 1780—90; Gioacchino Greco, celebrated in the beginning of the seventeenth century; and the Arabian Philip Stamma in Paris, 1737. Caxton's "Game and Playe of the Chesse," printed in 1474, is generally admitted to be the first typographical work executed in England. *Anastasia*, a German novel by Heynse, contains many ingenious ideas on chess-playing, and several fine games. Some very curious manuscripts, relating to this game, in the Chinese, Sanscrit, Persian, and Arabic languages, have been partially translated; and the presses of Europe have teemed with similar productions, the most noted of which are enumerated by Mr Lewis, in the preface to his edition of Saratt on Chess, 1822.

Laws of the game. 1. If the board, or pieces, be improperly placed, the mistake cannot be rectified after four moves on each side are played. 2. When a player has touched a piece, he must move it, unless it was only to replace it; when he must say, *J'adoube*, or *I replace*. 3. When a player has quitted a piece, he cannot recall the move. 4. If a player touch one of his adversary's pieces without saying *J'adoube*, he may be compelled to take it, or, if it cannot be taken, to move his king. 5. When a pawn is moved two steps, it may be taken by any adversary's pawn, which it passes, and the capturing pawn must be placed in that square over which the other leaps. 6. The king cannot castle if he has before moved, if he is in *check*, if in castling he passes a check, or if the rook has moved. 7. Whenever a player *checks* his adversary's king, he must say *Check*, otherwise the adversary need not notice the check. If the player should, on the next move, attack the queen, or any other piece, and then say *Check*, his adversary may replace his last move, and defend his king. 8. When a pawn reaches the first row of the adversary's side, it may be made a queen, or any other piece the player chooses. 9. If a false move is made, and is not discovered until the next move is completed, it cannot be recalled. 10. The king cannot be moved into check, nor within one square of the adverse king, nor can any player move a piece or pawn that leaves his king in check.

Chess Clubs; societies for the purpose of playing chess, and assembling the best players of a place. They flourish most in France and Britain, but there are many in Germany. They often challenge each other, and the game is carried on by letter.

CHEST (called, in anatomical language, the *thorax*) is the cavity of the body between the neck and the belly. The external parts of the thorax are the skin, the breasts, various muscles, and the bones which form the frame of the cavity. These are the sternum, running from the neck down the middle of the breast, and the ribs, which are inserted in the spine, and arched towards the sternum, with which they are firmly connected by means of a cartilage. The parts within the cavity of the thorax are the pleura and its productions, the lungs, heart, thymus gland, œsophagus, thoracic duct, arch of the aorta, part of the vena cava, the vena azygos, the eighth pair of nerves, and part of the great intercostal nerve.

CHESTER, or CHESHIRE; a county palatine of England, bounded by the rivers Mersey and Tame, which separate it from Lancashire, on the east by the counties of Derby and Stafford, on the south by Shropshire and Flintshire, and on the west by Denbighshire, Flintshire, and the estuary of the Dee. Its form is oval, with two projecting necks of land, the one called the Wirral, about twenty miles in length, and six in breadth, extending into the Irish sea, between the estuaries of the Dee and the Mersey, and the other forming part of Macclesfield hundred, extending fifteen miles in length, and about four in breadth, between Derbyshire and Yorkshire. Under the ancient Britons, it formed part of the territories of the Cornavii, and it constituted a part of the province of Flavia Cæsariensis of the Romans. The dairy is the principal object of attention with the Cheshire farmer, and this county has for ages been celebrated for its cheese, of which from eleven to twelve thousand tons are made annually. Salt and coal are abundant in this county. There are also mines of copper, lead, and cobalt. The principal salt-works are at Nantwich, Middlewich, Winsford, and Northwich. The rivers which water this county, for the most part, direct their currents northward, and discharge themselves into the Mersey and the Dee. Population of the county in 1831, 334,410.

CHESTER (anciently *Deva*); a city and county in itself, situated on the Dee, about twenty miles from the Irish sea, 145 N. Bristol, 181 N. W. London. It is a bishop's see. The city is square, and surrounded by a wall nearly two miles in circumference. It contains a cathedral, nine parish churches, a Roman Catholic chapel, and eight places of worship, for dissenters of different persuasions. The streets are hollowed out of a rock to the depth of one story beneath the level of the ground on each side; and the houses have a sort of covered portico running on from house to house, and from street to street, level with the ground behind, but one story above the street in front. The castle is a noble modern structure, built on the site of the old castle, and contains the county courts and jail. Chester has two yearly fairs, the most considerable in the north of England, held on the fifth of July and tenth of Oct., each lasting several days. Chester may be deemed a sort of provincial metropolis for the gentry of the neighbouring counties, of moderate fortune. Its maritime trade is chiefly coasting, and with Ireland, whence great quantities of linen are imported for the fairs. Besides linen, wood, hides, tallow, feathers, butter, provisions, and

other articles, are received from Ireland; grocery from London, timber from Wales; hemp, flax, and iron from the Baltic; and fruit, oil, barilla, cork, and wine from Spain and Portugal. The exports are coal, lead, calamine, copper-plates, cast-iron, and vast quantities of cheese. The only manufacture of consequence is that of gloves. Here are also iron founderies, and snuff-mills, and some well conducted establishments for ship-building. The shop-keepers of Chester likewise keep up a very profitable intercourse with North Wales. The port of Chester has been much improved of late years, but the shifting navigation of the Dee will never allow it to become of leading consequence. Population of the city in 1831, 21,363.

CHESTERFIELD (Philip Dormer Stanhope), earl of, a statesman, orator, and author, born in London, in 1694, studied with great success at Cambridge. In 1714, he made a tour through Europe, and acquired, particularly at Paris, that polished grace of manners for which he was distinguished. On the accession of George I., general Stanhope, his great uncle, procured him the place of gentleman of the bed-chamber to the prince of Wales; and the borough of St Germain's, in Cornwall, elected him to parliament, though he had not yet attained the legal age. At the close of the first month of his membership, he delivered a speech, in which he astonished the audience by the vigour of his thoughts no less than by the elegance of his style, and the facility and grace of his delivery. He distinguished himself equally in the house of lords, in which he took his seat after his father's death. In 1728, he was appointed ambassador to Holland, and succeeded in delivering Hanover from the calamities of a war, by which it was threatened. On his return, he was made knight of the garter and lord steward of the household to George II. He was afterwards appointed lord-lieutenant of Ireland, and, on his return, in 1746, received the place of secretary of state; but he soon retired from public affairs, and devoted the remainder of his life to study and the society of his friends. His talents as an author are displayed in several moral, critical, and humorous essays, in his parliamentary speeches, which were printed at a later period, and particularly in a collection of letters to his son, which are celebrated throughout Europe. To the charms of wit and grace he united good sense, a thorough knowledge of the manners, customs, and the political condition of Europe, extensive information, a noble and unaffected elegance, and a style that would do honour to the most experienced writer. All this, however, cannot excuse the corrupt moral tone of his letters. One is shocked to hear a father recommending to his son grace of manners as the most essential quality for a man of the world, and even instigating him to licentious irregularities. It must be mentioned, however, in his excuse, that the young man to whom these letters were addressed (a natural son, whom he had adopted under the name of *Stanhope*,) was remarkable for the awkwardness of his manners, and that his father, who set so high a value on elegance, hoped to inspire him with the same taste, by setting the subject in its strongest light. His efforts, however, were not successful. Towards the close of his life, Chesterfield became deaf, and suffered from other bodily infirmities, which cast a gloom over his last days. He was intimate with Pope, Swift, Bolingbroke, and other distinguished scholars, and an acquaintance of doctor Johnson, who called him a wit among lords, and a lord among wits, and said of his letters, that they taught the morals of a prostitute, and the manners of a dancing-master. He died in 1773, at the age of seventy-nine.

CHESTNUT. The sweet chestnut (*fagus castanea*) is a stately tree, and is distinguished by having spear-shaped and pointed leaves, with tapering serratures at the edge. The flowers appear in long, hanging spikes, or clusters, about the month of May; and the fruit, which is ripe in September, is enveloped in a husk defended by a great number of complicated prickles. Notwithstanding the known durability of the oak, there does not appear any well authenticated instance of the age of an oak being equal to that of the celebrated chestnut-tree at Tortworth, in Gloucestershire, which was known as a boundary mark in the reign of king John. This tree is supposed to have been then more than 500 years old, making its age at this time above 1100 years. The diameter of its trunk is fifteen feet, and it still continues to bear fruit. Few forest trees are more beautiful than the chestnut. It is true that the generality of painters prefer the oak for its picturesque form; yet, in the landscapes of Salvator Rosa, and other celebrated masters, chestnut-trees are very conspicuous. The timber of this tree was formerly much in use. It is frequently used for the beams and rafters of houses, and its appearance so nearly resembles that of the oak, that it requires the eye of a good judge to distinguish them from each other. For the heads and staves of casks, the wood of the chestnut is considered peculiarly excellent; and pipes made of it for the conveyance of water under ground are said to be more durable than those made of either elm or oak. For furniture, it may be stained so as somewhat to resemble mahogany. Hop-poles and poles for espaliers, and dead fences, made of young chestnut-trees, are preferred to most others. In America, it is chiefly used in the manufacture of rails for fences.

CHESTNUT, HORSE. See *Horse-Chestnut*.

CHEVAL, A (*French*); on horseback; astride any object. In a military sense, a body of troops is said to be *à cheval* of a river, if one wing is stationed on the right and the other on the left bank.

CHEVAUX DE FRISE (*Friesland horses*, so called because first used at the siege of Groningen, in that province, in 1658); an armed beam of square timber or iron, used to defend the fronts of camps, breaches, &c. They are usually from fifteen to eighteen feet long, and connected by chains, each being perforated with small holes, to receive rods of wood or iron, pointed at their extremities, and, when moved in any direction, affording a sort of hedge of spears.

CHIABRERA, Gabriel; a poet, born at Savona, in the Genoese territory, in 1552. Sound in mind and body, he lived to a great age, and died at Savona in 1638. His poetical genius developed itself late, and he was considerably advanced, when he began to study the poets attentively. He preferred the Greeks, and particularly Pindar, his admiration for whom inspired him with the desire of imitating him. Thus he created a manner and style which was altogether different from that of the other Italian lyric poets, and which procured him the surname of the *Italian Pindar*. Equally successful were his attempts to imitate Anacreon; his canzonets are as easy and elegant as his canzoni are sublime. He is, besides, the author of several epic, dramatic, pastoral, and other poems. His fame soon spread over all Italy. He visited Rome, and resided a considerable time at Florence and Genoa. Wherever he went, he was loaded with presents and honours.

CHIAOUS, or CHIAOUX, is a French corruption of the Turkish word *chaush*, or *chavush*, the title of the royal-messengers or gentlemen-ushers in the court of the grand signor. Their office partakes both of a civil and military character, and they act as the heralds and messengers of the empire.

CHIARAMONTI; the family name of pope Pius VII. (q. v.). Like his predecessors, Clement XIV. and Pius VI., from whom the *museum Pio-Clementinum* is called, he augmented the treasures of art in the Vatican. The museums established there by him and during his government are called after him; but this name is particularly applied to that collection of ancient statues and reliefs, which are placed in the hall adjoining the *museum Pio-Clementinum*. The selection and arrangement of these were committed to Canova. The description of this museum (*Il Museo Chiaramonti descritto ed illustrato da Filippo Aurelio Visconti e Gius. Ant. Guattani*, &c., Rome, 1818, fol.) forms a supplement to the work on the *museo Pio-Clementino*, published by Giamb. and Ennio Quir. Visconti.—The entrance into the *museo Chiaramonti*, as well as into the library of the Vatican, is by the *museo* (*Chiaramonti*) *delle inscrizioni*, the museum of Greek and Roman inscriptions, which are inserted in the walls of a long corridor—a collection which has not its equal in Europe. The pope caused it to be arranged by Gaet. Marini. The entrance to it is through the *loggie* of the Vatican. There is also a *Biblioteca Chiaramonti*, containing the whole library of cardinal Zelada, which has been added to the Vatican.

CHIARI, Pietro; a prolific writer of comedies and novels; born at Brescia, towards the beginning of the 18th century. After having completed his studies, he entered the order of Jesuits, but soon changed the monastic for the secular life, and, thus becoming free from all official duties, devoted himself solely to letters. He resided at Venice, with the title of poet to the duke of Modena, and, in the space of ten or twelve years, brought more than sixty comedies on the stage. Chiari and Goldoni were rivals, but the public adjudged the palm to the latter. Chiari's dramas in verse fill 10 vols.; those in prose, 4. He is not destitute of invention nor of art in the management of his subjects, but his works are deficient in animation, vigour, and humour. He died at Brescia, at a very advanced age, in 1787 or 1788.

CHIARO SCURO (an Italian phrase, meaning *clear-obscure*; in French, *clair-obscur*), in painting, is the art of judiciously distributing the lights and shadows in a picture. A composition, however perfect in other respects, becomes a picture only by means of the *chiaro scuro*, which gives faithfulness to the representation, and therefore is of the highest importance for the painter; at the same time, it is one of the most difficult branches of an artist's study, because of the want of precise rules for its execution. Every art has a point where rules fail, and genius only can direct. This point, in the art of painting, is the *chiaro scuro*. The drawing of a piece may be perfectly correct, the colouring may be brilliant and true, and yet the whole picture remain cold and hard. This we find often the case with the ancient painters before Raphael; and it is one of the great merits of this sublime artist, that he left his masters far behind him in *chiaro scuro*, though he is considered not so perfect in this branch as Corregio and Titian, who were inferior to him in many other respects. The mode in which the light and shade are distributed on any single object is easily shown by lines supposed to be drawn from the source of the light which is shed over the figure; but *chiaro scuro* comprehends, besides this, aerial perspective, and the proportional force of colours, by which objects are made to advance or recede from the eye, produce a mutual effect, and form a united and beautiful whole. *Chiaro scuro* requires great delicacy of conception and skill of execution; and excellence in this branch of art is to be attained only by the study of nature and of the best masters.—*Chiaro scuro* is also understood in another sense, paintings in *chiaro scuro* being such as are painted in light and shade and reflexes only, without any other colour than the local one of the object, as representations of sculpture in stone or marble. There are some fine pieces of this sort in the Vatican at Rome, by Polidoro da Caravaggio, and on the walls of the staircase of the royal academy of London, by Cipriani and Rigaud.

CHICKEN, Mother Carey's. See *Petrel*.

CHIHUAHUA; a state or province of Mexico, bounded E. by Coaghuila, S. by Durango, and W. by Cinaloa and Sonora. It is an elevated district, and suffers for want of water.

Chihuahua; a town of Mexico, and capital of the province of the same name, on a small branch of the Conchos; 180 miles N. W. of Mexico; lon. 104° 30′ W.; lat. 28° 50′ N.; population, 11,600. It is surrounded by rich silver mines.

CHILBLAINS are painful inflammatory swellings, of a deep purple or leaden colour, to which the fingers, toes, heels, and other extreme parts of the body are subject, on being exposed to a severe degree of cold. The pain is not constant, but rather pungent and shooting at particular times, and an insupportable itching attends it. In some instances, the skin remains entire; but in others, it breaks, and discharges a thin fluid. When the degree of cold has been very great, or the application long continued, the parts affected are apt to mortify, and slough off, leaving a foul, ill-conditioned ulcer behind. Children and old people are more apt to be troubled with chilblains than persons of middle age; and such as are of a scrofulous habit are remarked to suffer severely from them.

CHILDERMAS DAY; a festival celebrated by the church of Rome on the 28th of December, in commemoration of the massacre of the Innocents. Bourne, in his *Antiquitates Vulgares*, mentions a popular superstition, that "it is very unlucky to begin any work upon Childermas day." Revels, however, were held on this day.

CHILE; a country of South America, bounded N. by Buenos Ayres, E. by Buenos Ayres and Patagonia, from which it is separated by the Andes, S. by Patagonia, and W. by the Pacific ocean; lon. 69° to 74° W.; lat. 24° to 45° S.; about 1400 miles long, and from 100 to 200 broad; square miles about 200,000. Population stated, in 1806, at 720,000; by Malte-Brun, in 1820, and a Spanish journal, at 900,000. Another statement, said to be founded on a census, makes it 1,200,000, exclusive of independent Indians. It is divided into two intendencies, St Jago and Conception, which are subdivided into thirteen provinces, viz. Copiapo, Coquimbo, Quillota, Aconcagua, Melippa, St Jago, Rancagua, Colchagua, Maule, Itata, Chillan, Puchacay, and Huilquilemu. The islands are Coquimbanes, Mugillan, Tortoral, Pajaro, Masapiero, Juan Fernandez, Mocha, and the archipelago of Chiloe. The chief towns are Santiago or St Jago (the capital), Conception, Valparaiso, Valdivia, Chillan, Coquimbo, St Fernando, and Petorca. The rivers are numerous, but small, and have generally rapid currents. Some of the principal ones are the Maule, Biobio, Cauten, Tolten, Valdivia, Chaivin, Bueno, and Sinfondo. Chile presents a plain, gradually rising in elevation as it recedes from the coast and approaches the Andes. From this sloping conformation, it is fertilized and beautified by numerous rivers flowing from the Andes; and of these, fifty-three communicate directly with the Pacific ocean. The country, intercepted between the foot of the Andes and the Pacific ocean, is divided into two

equal parts, the maritime and midland. The maritime part is intercepted by three ridges of mountains, running parallel with the Andes, between which are numerous well-watered valleys. The midland country is generally level, of great fertility, and enjoying a delightful climate. The great chain of the Andes traverses the country from north to south, and presents a number of summits, the height of which has been estimated at upwards of 20,000 feet. Among the Chilean Andes there are said to be fourteen volcanoes in a state of constant eruption, and a still greater number that discharge smoke at intervals. Chile abounds with vegetable, animal, and mineral productions. Maize, rye, barley, pulse, wine, oil, sugar, cotton, and fruits of various kinds, are cultivated. It has luxuriant pastures, which feed numerous herds of cattle. It is rich in mines of gold, silver, copper, tin, and iron. All the metals are found; also a variety of earths and precious stones. It is free from dangerous or venomous animals, which are so much dreaded in hot countries, and has but one species of small serpent, and that perfectly harmless. The climate is remarkably salubrious, and the weather generally serene. In the northern provinces, it rarely rains, in some parts never, but dews are abundant; in the central part, rain often continues three or four days in succession, followed by fifteen or twenty days of fair weather; in the southern provinces, rains are much more abundant, and often continue nine or ten days without cessation. The rainy season commences in April, and continues through August. Snow falls abundantly on the Andes, but is never seen on the coast. Earthquakes are common. Chile was formerly a colony of Spain, but, in 1810, the people took the government into their own hands, and, in 1818, made a declaration of absolute independence, which has been hitherto uninterrupted, and recently acknowledged by Portugal. The supreme authority was administered by an elective magistrate, called the *supreme director*, until May, 1827, when a president was substituted, in imitation of the government of the United States. The Roman Catholic is the established religion of Chile, and the church is very rich. There are said to be about 10,000 monks and nuns in this country, and the religious institutions with which they are connected hold nearly one-third of the landed property of the country. The army, in 1818, was stated at 8400 regular troops; the militia at 28,960 men, and the revenue at 2,177,967 dollars. The part of Chile lying south of the river Biobio, in lat. 36° 44′ S., is inhabited chiefly by Indians. The Araucanians, a celebrated and warlike tribe, inhabit the region lying between the rivers Biobio and Valdivia. They are enthusiastically attached to liberty, and have never been subdued.

Of the history of Chile, previous to the middle of the fifteenth century, nothing more is known than what may be derived from the vague traditions of the natives. In 1535, the Spaniards first visited it. They were at first received by the Chileans with the utmost respect; but a cruel massacre of some of their chief men, by order of Almagro, the Spanish general, produced opposite feelings; and Almagro, advancing into the country of the Promancians, was defeated with loss, when the Spaniards, disgusted with their general, and with the state of affairs, returned to Peru, where they arrived in 1538. Two years afterwards, Pizarro despatched Pedro de Valdivia, with 200 Spaniards and a numerous body of Peruvians, to Chile, for the purpose of settling such districts as he should conquer. Valdivia succeeded in overcoming the resistance of the natives, and founded the city of Santiago, Feb. 24, 1541. Hostilities with the natives ensued, till Valdivia, having settled his power in the northern provinces of Chile, turned his arms against the southern portion of the country. In 1550, he founded the city of Conception, and was soon afterwards attacked by the Araucanians, with whom he fought several battles, and was finally defeated and taken prisoner, Dec. 3, 1553. Many battles were subsequently fought between the Spaniards and this tribe of Indians which, though they generally terminated in favour of the former, were destructive to them, and impeded the progress of the settlements. In 1598, a general insurrection of the Araucanians took place; and, with the assistance of their allies, they put to death every Spaniard whom they found outside of the forts. Villanca, Valdivia, Imperial, and several other towns, were attacked and taken, and Conception and Chillar were burnt. To add to the misfortunes of the Spaniards, the Dutch landed on the Chiloe islands, plundered Chiloe, and put the Spanish garrison to the sword. Hostilities were continued for many years without any extraordinary result. Each party seemed obstinate in its determination, and each committed cruelties and outrages, with which the history of South America is unhappily too familiar. At length, in 1641, preliminaries of peace were finally settled between the marquis of Baydes then governor of Chile and the Araucanians. By the terms of the treaty, the two nations agreed to suspend hostilities, and the Araucanians engaged to prevent any foreign power from landing on their territories. Two years afterwards, the Dutch made an attempt to settle a colony at Valdivia; but, hearing that an army of Spaniards and Araucanians were marching against them, they evacuated Chile. The peace between the Spaniards and Araucanians lasted until 1655, when hostilities again broke out with their former fury, and continued for ten years with various success. At the end of this period, a formal treaty was made. This peace was more lasting than the former, and, until the beginning of the eighteenth century, the history of Chile presents little deserving of record. Though tranquil for so long a time, the spirit of the Araucanians was not broken, nor was their aversion to the Spaniards abated. In 1722, a general conspiracy was formed by the nations from the borders of Peru to the river Biobio. At a fixed moment, when the watch-fires were to blaze on the mountains, the Indians were to rise against the whites, and release the country from their yoke. The design, however, miscarried: only the Araucanians took up arms; and, after a short contest, peace was again concluded. In 1742, don Josef Manto, then governor, collected the colonists into towns, divided the country into provinces, and founded several new cities. In 1770, an attempt of don Antonio Gonzago to compel the Araucanians to adopt habits of industry, and to associate in towns, was the cause of a new war. At length, peace was restored, one condition of which was that the Araucanians should keep a resident minister at Santiago—a stipulation which proves their power and importance.

Chile appears to have enjoyed tranquillity during the remainder of the eighteenth century, and, being relieved from the hostility of the Araucanians, agriculture and commerce, which had been greatly neglected, soon revived. The occupation of Spain by the French troops, in 1809, caused a revolutionary movement in Chile, as well as in other parts of Spanish America. July 10, 1810, the president Carrasco was deposed by the native inhabitants, and a junta of government was formed, under the pretext of holding the country for Ferdinand, but with the secret intention of ultimately proclaiming independence. At this period, the most active and influential persons were the three Carreras, Rodriguez, and O'Higgins, the government being, in reality, exercised by

the Carreras. In 1814, Chile was invaded by a royalist army from Peru, under the command of general Osorio; and the defeat of the patriots at Rancagua, Oct. 1, 1814, compelled the leading individuals to cross the Andes, and seek refuge in Buenos Ayres, leaving their country in possession of the Spaniards. In 1817, the patriots obtained succours from Buenos Ayres, commanded by general San Martin, and reentered Chile at the head of a powerful body of troops, which defeated the Spaniards at Chacabuco, Feb. 12, 1817, and again at Maypu, April 5, 1817, and thus permanently secured the independence of the country. By the intrigues of San Martin, the three Carreras and their friend Rodriguez, the best men in Chile, were shamefully murdered, and his favourite, Don Bernardo O'Higgins, was placed at the head of the government, with the title of *supreme director*. Meanwhile, San Martin, with the liberating army, and aided by a Chilean fleet under lord Cochrane, invaded Peru in return, and gave it a temporary independence. O'Higgins continued to administer the government until Jan. 23, 1823, when he was compelled to resign the supreme authority, owing chiefly to the dissatisfaction of the people with his financial measures. He was succeeded by general Ramon Freire, the latter being appointed supreme director. In January, 1826, the archipelago of Chiloe, which had remained to that time in the hands of the Spaniards, surrendered to the government of Chile. But disturbances have existed among the Araucanians, on the southern frontier, down to the present time, occasioning more or less inconvenience to the Chileans. In other respects, Chile has been wholly unmolested by foreign enemies, unless an attempt of the exile O'Higgins upon Chiloe, in 1826, can be considered such. But the unsettled state of the government, and the maladministration of its affairs, have impeded the prosperity of the country.—In July, 1826, the director Freire resigned his office, and admiral Manuel Blanco was appointed in his place. In May, 1827, the form of the government was changed, and, Blanco having resigned, Freire was again called to the head of affairs as president, but refused to be qualified; and the administration of the government devolved upon don Francisco A. Pinto, the vice-president. Three attempts have been made to effect a solid organization of the government by means of a permanent constitution. One constituent congress assembled in 1823, another in 1824, and a third in 1826; but neither of them accomplished the object of their meeting, and the country is agitated still between the advocates of a central and of a federal constitution. Stevenson's *South Am.*, vol. iii.; *Amer. An. Reg.*, vol. i. and ii.

CHILLICOTHE; a post-town and capital of Ross county, Ohio, on the west bank of the Scioto, forty-five miles in a right line, and seventy according to the windings, from its mouth; lon. 82° 57′ W.; lat. 39° 18′ N.; population, 2426. It is pleasantly situated on the borders of an elevated, extensive, and fertile plain, regularly laid out, the streets crossing each other at right angles, and is a flourishing town. It contains a court-house, a jail, a market-house, three houses of public worship, a rope-walk, four cotton manufactories, and a steam mill. In the vicinity of the town there are many valuable mills.

CHILLINGWORTH, William; an eminent divine and writer on controversial theology. He was born at Oxford, in 1602, and received his education at Trinity college, in the university of that city. He did not confine his academical studies to divinity, but also distinguished himself as a mathematician, and cultivated poetry. Metaphysics and religious casuistry, however, appear to have been his favourite pursuits; and lord Clarendon, who was particularly intimate with him, celebrates his rare talents as a disputant, and says he had "contracted such an irresolution and habit of doubting, that, by degrees, he grew confident of nothing." This sceptical disposition laid him open to the arguments of a Jesuit, who persuaded him that the church of Rome, in establishing the authority of the pope as an infallible judge, afforded the only means for ascertaining the true religion. He was convinced by this reasoning, and converted, but subsequently came to the conclusion that he had acted erroneously, and wrote several pieces to justify his second conversion, especially The Religion of Protestants a safe Way to Salvation, first published in 1637. Some scruples of conscience, relative to signing the thirty-nine articles, prevented him, for a time, from obtaining church preferment. His scruples, however, were so far overcome, that he made the subscription in the usual form, and was promoted to the chancellorship of Salisbury, with the prebend of Brixworth annexed, in July, 1638. On the civil war taking place, Chillingworth joined the king's party, and employed his pen in a treatise Of the Unlawfulness of resisting the lawful Prince, although most impious, tyrannical, and idolatrous. This tract was not, however, committed to the press. He did not confine himself to literary efforts in support of the royal cause, having, at the siege of Gloucester, in 1643, acted as engineer. His classical reading suggested to him an imitation of some Roman machine for the attack of fortified places; but the approach of the parliamentary army prevented the trial of it against the walls of Gloucester. Not long after, he retired to Arundel castle, in an ill state of health, and was made a prisoner on the surrender of that fortress to Sir William Waller. Being removed, at his own request, to Chichester, he died in the episcopal palace, in January, 1644. Chillingworth published sermons and other theological works, of which the best edition is that of doctor Birch, 1742, folio.

CHILOE; a considerable island in the south Pacific ocean, on the coast of Chile; lon. 72° 45′ W.; lat. 43° S.; 140 miles long, and sixty, where widest, broad. It produces most of the necessaries of life; and much ambergris is found here. The cedar-trees grow to an amazing size. There are many small islands east of Chiloe, in a narrow sea, called the *archipelago of Chiloe*, which separates the island from the continent. Population of the whole 26,000. Chief town, San Carlos. There are forty-seven islands in the archipelago of Chiloe, thirty-two of them inhabited.

CHILTERN HILLS; a range of chalky hills, in England, in the county of Oxford, once covered with woods, supposed to have been, at one time, a royal forest. There still remains a nominal office, called the *stewardship of the Chiltern hundreds*, in the gift of the crown. By the acceptance of this, a member of the house of commons vacates his seat in parliament. It is, therefore, generally conferred on such members as wish to resign their seats.

CHIMBORAZO; a mountain of Colombia, in the province of Quito, about 100 miles S. by W. Quito; lat. abont 2° S. It is the most elevated summit of the Andes, rising to the height of 21,440 feet above the level of the sea, and covered with perpetual snow 2600 feet from the summit and upwards. It presents a magnificent spectacle when seen from the shores of the Pacific ocean after the long rains of winter, when the transparency of the air is suddenly increased, and its enormous circular summit is seen projected upon the deep azure-blue of the equatorial sky. The great rarity of the air, through which the tops of the Andes are seen, adds very much to the splendour of the snow, and aids the magical effect of

its reflection. This mountain was ascended, in 1802, by Humboldt and Bonpland, who reached to within 2140 feet of the summit, being, by barometrical measurement, 19,300 feet above the level of the sea—a greater elevation than ever was before attained by man. Their further ascent was prevented by a chasm 500 feet wide. The air was intensely cold and piercing, and, owing to its extreme rarity, blood oozed from their lips, eyes, and gums, and respiration was difficult. One of the party fainted, and all of them felt extreme weakness. Condamine ascended, in 1745, to the height of 15,815 feet.

CHIMERA; a fabulous monster, breathing flames, with the head of a lion, the body of a goat, and the tail of a dragon, which laid waste the fields of Lycia, and was at last destroyed by Bellerophon. (See *Hipponous*.) Her form is described by the poets as an unnatural mixture of the most incongruous parts. Therefore the name of *chimera* is used for a nondescript, an unnatural production of fancy. According to some, Chimera was a volcano in Lycia, around the top of which dwelt lions, around the middle goats, and at the foot poisonous serpents. Bellerophon is said to have been the first who rendered this mountain habitable.

CHIMES, in horology, is a species of music, mechanically produced by the strokes of hammers against a series of bells, tuned agreeably to a given scale in music. The hammers are lifted by levers, acted upon by metallic pins, or wooden pegs, stuck into a large barrel, which is made to revolve by clock-work, and is so connected with the striking part of the clock-mechanism, that it is set in motion by it at certain intervals of time, usually every hour, or every quarter of an hour. The music thus produced may consist of a direct succession of the notes constituting an octave, frequently repeated, or otherwise may be a psalm-tune, or short popular air in the key to which the bells are tuned. This species of mechanical music most probably had its origin, like clock-work itself, in some of the monastic institutions of Germany, in the middle ages. The first apparatus for producing it, is said to have been made at Alost, in the Netherlands, in 1487. The chime mechanism may be adapted to act with the large bells of a church steeple, by means of wheel-work strong enough to raise heavy hammers; or a set of bells, of different diameters, may be arranged concentrically within one another on one common axis, sufficiently small to be introduced into the frame of a clock, or even of a watch. The chime mechanism is sometimes so constructed, that it may be played like a piano, but with the fist instead of the fingers. This is covered with leather, that the blow on the key may be applied more forcibly. Difficult as the performance is, some players can execute compositions consisting of three parts, and even produce trills and *arpeggios*. Burney relates that the chime-player Scheppen, at Louvain, laid a wager with an able performer on the violin, that he would execute a difficult solo for the violin with the bells, and won his wager. Pottheff, organist and chime-player at Amsterdam, became blind in his seventh year, and received the above named appointment in his thirty-first year; and, although every key in his apparatus required a force equal to a two-pound weight, yet he played his bells with the facility of a performer on the piano-forte. Burney heard him perform some fugues in 1772.

CHIMNEY. How far the Greek and Roman architects were acquainted with the construction of chimneys, is a matter of dispute. No traces of such works have been discovered in the houses of Pompeii, and Vitruvius gives no rules for erecting them. The first certain notice of chimneys, as we now build them, is believed to be that contained in an inscription at Venice, over the principal gate of the *Scuola Grande di Sta. Maria della Carità*, which states that, in 1347, a great many chimneys were thrown down by an earthquake. Chimneys require much attention, to make them secure and prevent their smoking, so great an annoyance to domestic comfort. It seems, at present, to be acknowledged, that it is much better to exclude the cold, damp air from the flues, by narrowing the aperture at the top, than to give a larger vent to the smoke, at the risk of admitting a quantity of air to rush down the flue. For this reason, chimney-pots are of great use. In Prussia, where the architectural police (*Baupolizei*) is strict, great attention is paid to the erection of chimneys, and to the regular sweeping of them, the chimney-sweepers being bound to sweep the chimneys of a certain number of streets within a regular time. The longer a chimney is, the more perfect is its draught, because the tendency of the smoke to draw upwards is in proportion to the different weight of the column of air included in a chimney and an equal column of external air. Short chimneys are liable to smoke, and fire-places in upper stories are, therefore, more apt to smoke than those in the lower ones. Two flues in the same chimney should not communicate with each other short of the top. Some chimneys, in large establishments in London, are very remarkable for their size.

CHIMNEY-SWEEPERS are, in all countries, in a state deserving great pity. Their condition in London has led to the establishment of a *Society for superseding the necessity of climbing-boys, by encouraging a new method of sweeping chimneys, and for improving the condition of children and others employed by chimney-sweepers*. The subject has, likewise, occupied the attention of parliament, and due investigation has shown that there are few chimneys which cannot be swept as well by a machine as by boys. Most of the particulars relative to the evils of this trade (one of which is the incurably cancerous diseases to which the boys are very generally subject), and the facility with which a substitute may be provided for it, may be found in the Chimney-sweeper's Friend, or Climbing-Boy's Album, by James Montgomery. In France, the little chimney-sweepers are generally Savoyards.

CHIMU; the name of some highly singular and extremely interesting ruins near the town of Mansiche, in Peru, which are supposed to be the vast remains of an ancient city. Humboldt visited them during his travels in Peru, and went into the interior of the famous *Guaca de Toledo* (burying-place, or *tumulus*, of Toledo), the tomb of a Peruvian prince, in which Garci Gutierez de Toledo discovered, on digging a gallery, in 1576, massive gold amounting in value to more than a quarter of a million sterling, as is proved by the books of accounts, preserved at the mayor's office in Truxillo.

CHINA. The Chinese empire, including the tributary states, and those under its protection, consists of about 5,250,000 square miles, with 242,000,000 inhabitants. China Proper, "the centre of the world," contains 1,298,000 square miles (lat. 18° 37′—41° 35′ N.), with 146,280,000 inhabitants, of whom 2,000,000 live on the water. Among the inhabitants are 31,000 sailors, 822,000 foot-soldiers, 410,000 horse, 7552 military and 9611 civil officers.

Subject to China are Mantchou (726,800 square miles), Mongolia (1,935,910 square miles), and Tourfan (578,275 square miles). Under her protection are Thibet, Bootan, Corea, Loo-Choo, containing together 726,202 square miles. The Portuguese navigators who followed Vasco da Gama were the first from whom the Europeans obtained tolerably

correct ideas of the situation, extent, and character of this country. Since that time, our knowledge of China has been derived from several ambassadors, who saw the court and the roads, from merchants who had inhabited the suburbs of one seaport (Canton), and from numerous missionaries, who relate what they have seen, but generally with little discrimination. Much information is to be hoped from the Canton Register, a paper which is published twice a-month in Canton.* The emperors of the Mantchou dynasty, erroneously called *Tartars*, have extended their conquests over the greatest part of the country formerly called *Independent Tartary*, the inhabitants of which are, however, not Tartars, but mostly Calmucks and Mongols. The Russians have advanced, on the other side, into Siberia. Russia and China have thus come into contact, on a line extending from lake Palcati to the mouth of the river Amour. This extensive frontier is principally formed by the Altaian, Sayanian, and Daourian mountains. In Daouria, however, the Russians have extended their possessions beyond the last-named mountains to the banks of the River Amour. Lake Palcati, the Alak mountains, and the Beloor mountains, divide the Chinese empire, on the west, from the Kirguises, Usbecks, and other independent Tartar tribes. While the Chinese dominions extend to the confines of Asiatic Russia, on the north and north-west, on the west and south-west they extend over the immense regions of Thibet, and almost reach the English territories in Bengal. On this side, China is divided from India by the small countries of Sirinagur, Nepaul, and others, and by the Garrow mountains. Farther to the east, the Burman empire bounds on the Chinese province of Yun-nan. In the south, the empire of Anam and the provinces of Laos and Tonquin touch its borders. The Eastern ocean, with the gulf of Corea, washes the coasts of China for an extent of 3600 miles, from the Tonquinese frontier to the mouth of the river Amour. To the south are the Chinese and Yellow seas, and the gulf of Tonquin. The channel of Formosa separates the island of that name from the continent. The Blue and Yellow seas flow, the former between China and the islands of Loo-Choo and Japan, the latter between China and Corea. The sea of Japan extends from Corea to the river Amour: at the extreme point, it goes under the name of the *channel of Tartary*.

China Proper is bounded on the east by the Eastern ocean; on the north, by the immense wall of Mongolia and Manchooria, which has been built more than 2000 years, and is 1500 miles in length, thirty feet high, and fifteen feet thick on the top. To the west, political limits are prescribed to the wanderings of the Calmucks or Eleuthes of Hoho-Nor and of the Sifans. To the south, the boundaries of the Chinese empire and China Proper are the same. China Proper contains 1572 towns, the principal of which are Pekin, Canton, and Nankin (q. v.); 1193 fortresses, 2796 temples, 2606 convents, thirty-two imperial palaces, &c. It is divided into fifteen provinces. Two chains of mountains extend through the country; the one in the south-east, the other in the north-west. The former extends between the provinces Quang-si, Quang-tong, and Fo-Kien, on the south, and the provinces Hoc-Quang and Kiang-si on the north. Its original course is from west to east, but, after reaching the limits of Fo-Kien, it turns to the north-east. The principal chain is difficult of access, particularly in the provinces of Koeit-Cheou and Quang-si, owing to the savage tribes by which it is inhabited. Travellers have only examined the little mountain Meiling, which rises 3000 feet above lake Po-yang. The heights to the north-west are rather a succession of terraces than regular chains of mountains. The province of Shan-si is full of mountains, which appear to belong to a chain extending from the banks of the river Amour, traversing the whole of Mongolia. They are almost entirely composed of perpendicular rocks. The province of Shan-Tong consists, principally, of a mountainous peninsula. These mountains contain coal mines, and form a group entirely detached from the other Chinese chains. The largest plains are in the province Kiang-Nan, between the two great rivers Hoang-ho and Yang-tse-Kiang or Kiang-Ku. The former, or the Yellow river, rises from two lakes in the country of the Calmucks of Hoho-Nor; the latter, or the Blue river, rises somewhere in the north of Thibet, near the desert of Cobi. Both descend rapidly from the table-lands of central Asia, and each encounters a chain of mountains which forces it to describe a long circuit,—the Hoang-ho to the north, the Yang-tse-Kiang to the south,—after which they again approach, and terminate their courses within a distance of 180 miles of each other. Besides these, there are the Fuen-ho, the Hoei-ho, and the Hoay-ho, which empty into the Blue river; the Yalon-Kiang, which is about 600 miles long, the Tchoo or Yang-Kiang, the La-Kiang, and the Yuen-Kiang, which flow into the Yellow river. The Yuen and Yon flow into the Blue river through two lakes. The Hoan-Kiang in the south, and the Pay-ho in the north, are unconnected with the two great rivers. The former falls into the gulf of Canton, and the latter into the gulf of Pekin. These, and innumerable other rivers, united by numerous canals, are of incalculable advantage to agriculture and inland navigation. The principal canal is the Imperial canal, 1400 miles long, which forms a water communication between Pekin and Canton, with an interruption of only one day's journey. China also abounds in lakes, particularly the province of Houquang (which signifies the *country of lakes*). The Poyang-hoo, according to Staunton the largest lake in China, is, according to Du Halde, only ninety-five miles in circumference.

In a country of such vast extent, the climate must necessarily be very various. In the south, near the tropic, the heat is excessive, but it is moderated by the influence of the periodical winds. The northern and western parts are much colder than the countries of Europe situated in the same latitude, owing to the elevation of the land, to the nature of the soil, which is filled with saltpetre, and to the snow, which, during the greatest part of the year, covers the central mountains of Asia.

Agriculture, in China, is in a very flourishing condition. The principal production is rice. In the north-western provinces, which are too cold and too dry for its production, its place is supplied by wheat and other grain. Yams, potatoes, turnips, beans, and a species of white cabbage (*petsai*), are likewise produced. Arable land is cultivated without interruption, the practice of fallowing being unknown. Even the steepest hills are brought into cultivation, and artificially watered. The manner in which the dwellings of the peasantry are situated, not being collected into villages, but scattered through the country, contributes greatly to the flourishing state of agriculture. There are no fences, nor gates, nor any sort of precaution against wild beasts or thieves. The women raise silkworms and spin cotton; they also manufacture woollen stuffs, and are the only weavers in the country. The honours conferred on

* A museum, to be called *The British Museum in China*, it is stated in the Canton Register, is about to be established among the British residents in that city. Perhaps this institution, also, will contribute to enlarge our knowledge of China.

agriculture by the Chinese government are generally known. Every year, on the 15th day of the first moon, the emperor repairs, in great state, to a certain field, accompanied by the princes and the principal officers, prostrates himself, and touches the ground nine times with his head, in honour of Tien, the God of heaven; he pronounces a prayer prepared by the court of ceremonies, invoking the blessing of the Great Being on his labour and that of his people. Then, as the high-priest of the empire, he sacrifices a bullock to heaven, as the fountain of all good. Whilst the victim is offered on the altar, a plough, drawn by a pair of oxen, highly ornamented, is brought to the emperor, who throws aside his imperial robes, lays hold of the handle of the plough, and opens several furrows over the whole field. The principal mandarins follow his example. The festival closes with the distribution of money and cloth amongst the peasantry. In the same manner the emperor again comes to sow the seed. In the provinces, the viceroys perform the same ceremony on the same day. In the cultivation of trees, the Chinese have made comparatively little progress. They have many fruit-trees, but have done little for their improvement. Grafting is not common. Currants, raspberries, and, according to some, olives, do not grow in China. But nature has conferred on this country other treasures, such as the tea-plant, from which the Chinese derive immense profits, the camphor-tree, the aloe, the sugar-cane, the bamboo, indigo, cotton, rhubarb, the varnish-tree, soap-tree, tallow-tree, lime, wax-tree, and the li-tchi. The Chinese have all the domestic animals of Europe and America, amongst which the hog is the most numerous. The camel is the usual beast of burden. The wild animals are the elephant, the rhinoceros, the tiger, the musk-ox, several kinds of apes, the deer, the wild boar, the fox, &c. Poultry abounds in China, particularly ducks. Several sorts of birds are distinguished for the richness of their plumage, such as the gold and silver pheasants, and the peacock with spurs. Great quantities of fish are found in the waters. The gold-fish are there, as with us, kept as an ornament. Amongst the insects of China, the silkworm, which is found in all parts of the country, and appears to be indigenous, is the principal. Of the mineral productions our information is very imperfect. Silver mines are abundant, but they are little worked. The gold is, for the most part, obtained from the sands of the rivers in the provinces of Se-tchuen and Yun-nan; but gold and silver are not coined. Tutenague is a metallic substance peculiar to China, which is used for the manufacture of vessels and utensils, and which some suppose to be pure zinc, and others an artificial composition. China produces a peculiar kind of copper; also arsenic, much quicksilver (in Yun-nan), but little lead and tin. Of valuable stones, it affords the lapis lazuli, the rock-crystal, the loadstone, and various kinds of marble. Of clays, the porcelain clay is the only kind we need mention. Salt is a profitable monopoly of the government.

The features and the shape of the skull of the Chinese prove their descent from the Mongols; but a residence of many centuries in a milder climate has softened their characteristic marks. A Chinese woman is proud of her beauty in proportion to the smallness of her eyes, the protuberance of her lips, the lankness and blackness of her hair, and the smallness of her feet. The last completes the Chinese idea of beauty, and is obtained by pressure and hindering the growth. By the men, corpulence, as the sign of an easy life, is regarded with respect. Lean people are considered void of talent. The higher classes allow the nails of their fingers to grow, some on one hand some on both, and dye their hair and beards black. The Chinese possess the usual virtues and vices of a slavish, industrious, and commercial people.

The government is an absolute monarchy, but the mandarins and tribunals are permitted to make respectful remonstrances to the emperor. The emperor calls himself *holy son of heaven, sole guardian of the earth*, and *father of his people*. He is obliged to occupy himself constantly with the affairs of state. He has three wives, of whom only one bears the title and rank of empress. He resides, generally, in Pekin; in summer, at Tchehol. Offerings are made to his image and to his throne; his person is worshipped; his subjects prostrate themselves in his presence. The emperor never appears in public without 2000 lictors, bearing chains, axes, and other instruments characteristic of Eastern despotism. The revenue is estimated at 150,000,000 dollars, and consists, chiefly, in the productions of the soil. It is raised by a land-tax, by duties on imports and exports, and on articles of internal commerce, and by a poll-tax on every person between the ages of twenty and sixty. The Chinese army is very numerous, consisting of about 900,000 men, but does not appear capable of resisting the irregular Asiatic troops, much less European soldiers.

The Chinese nobility is of two kinds, the dignity of the one being personal, that of the other official. Of the former there are five degrees, the three first of which are conferred only on the relations of the emperor, and are generally translated by the term *prince*. These princes are bound to live within the precincts of the imperial palace. The personal nobility has precedence over the mandarins, or official nobility. The rank of the mandarins is indicated by the colour of the buttons on their caps. There are likewise titular mandarins.

Chinese Mandarins.

There are, in all, from 13,000 to 14,000 civil mandarins, called *governors*, and 18,000 military mandarins. The former are divided into nine, the latter into five classes. The highest body of officers in the empire is the council of the ministerial mandarins. These transact business with the emperor. Subordinate central authorities are, 1. *Li-pu* (guard of civil officers), which proposes pardons to the emperor; 2. *Ho-pu* (ministry of finance); 3. *Li-pu* (court of ceremonial); 4. *Ping-pu* (council of war); 5. *Hong-pu* (ministry of justice, including *Kong-pu*, or that of architecture). In every province, a mandarin is governor, with a council to watch over his actions and execute his commands. There are courts of justice in the different

towns. The ceremonial dress of the mandarins is of embroidered satin, with a covering of blue crape. Badges, indicating the civil or military rank of the wearer, are embroidered in front and on the back. The right to wear a peacock's feather on the back of the cap is equivalent to a European order, and is conferred as a particular mark of favour. The following cut represents the costume of the body-guard of the emperor.

Chinese Body-Guard.

The pretended wisdom of the Chinese laws may be characterized in a few words:—they are good police regulations, accompanied with good lessons on morality. They give to the emperor, as well as to the mandarins, unlimited power over the nation, which considers blind obedience to superiors its first duty. Innumerable ceremonies perpetually remind it of the distinctions of rank. (See the *Chinese Ceremonial*, in verse, Macao, 1824.) In intellectual improvement, this nation has long been stationary. This is partly owing to the love of antiquity common throughout Asia, partly to the want of intellectual communication with other nations. This is principally prevented by the difficulty of their written language, which is not, like ours, formed of letters and syllables, but of characters. (See *Chinese Language and Literature*, at the conclusion of this article.) Mechanical skill has been carried to great perfection among them; their industry in the manufacture of stuffs, porcelain, lackered ware, &c. is astonishing, and can only be compared with their own labours in digging canals, in the formation of gardens, levelling mountains, and other similar works. Many of our most useful inventions are to be found among them. They printed books, before the art was invented in Europe, with characters carved on wooden tablets, which is their present practice. They also used the magnet before its use was known to us; but they have remained far behind us in the art of navigation, on account of their ignorance of ship-building. A short time ago, a translation of a Chinese treatise on navigation, by one of their naval officers, was published, which showed an utter ignorance of this art. The monuments of China have, perhaps, been, on the whole, too much praised. Yet we must acknowledge our wonder at their great roads, their immense single-arched bridges, their pyramidal towers, but, above all, at their great wall, called, in Chinese, *Van-li-Tching* (the wall of 10,000 Li), which traverses high mountains, deep valleys, and, by means of arches, wide rivers, extending from the province of Shen-Si to Wanghay or the Yellow sea, a distance of 1500 miles. In some places, to protect exposed passages, it is double and treble. The foundation and corners are of granite, but the principal part is of blue bricks, cemented with pure white mortar. At distances of about 200 paces are distributed square towers, or strong bulwarks.

The national character is the result of their attachment to established customs. The manner of living is prescribed to each rank by invariable rules. The Chinese abstain almost entirely from spirituous liquors: the use of tea is general. Their principal article of food is rice. Polygamy is permitted to the nobles and mandarins. The emperor maintains a numerous harem. Women are kept in a sort of slavery. The peasant yokes his wife and ass together to the plough. The Chinese pay a kind of religious worship to their ancestors, and perform certain ceremonies around their tombs. Respect toward parents is a duty inculcated by their religion and laws. The primitive religion of China appears to have been a branch of Shamanism, the foundation of which is the worship of the stars and other remarkable objects of nature. This ancient religion has been supplanted by the doctrines of more modern sects. Among these, the principal are the sect of Cong-fu-tse (Confucius) and of Lao-Kiun or Tao-tse. The bulk of the nation has embraced the religion of Fo (see *Confucius*, and *Fo*), which was brought from India. The religion of the emperors of the Tartar-Mantchoo dynasty is that of the Dalai-Lama. (See *Lama*.) The following represents the costume of Chinese lamas or priests.

Chinese Lamas.

For the propagation of Christianity in China, see *Missions*. The discovery of a conspiracy against the emperor, in 1823, gave rise to a general persecution of the Christians, which, however, terminated in 1824. According to the accounts of the French mission in China, the number of Christians in that country in September, 1824, amounted to 46,287; there were 27 schools for Christian boys, and 45 for Christian girls. In the year 1829, two Chinese Christians were brought to Paris; they spoke Latin, as most Christians of that country do.

The principal mart of Chinese commerce is Canton (q. v.). Opium, although a contraband article, is imported to a large extent. In 1830–31, the quantity of Indian opium smuggled into China, amounted to 18,760 chests, value £2,580,000. The

chief export is tea. Hitherto Britain has been entirely supplied with this article through the medium of the East India Company; but in April, 1834, this monopoly ceased, and the trade to China is now open. (See *East India Company*, and *Tea Trade*.) Chinese merchants are by no means distinguished for honesty in their dealings; but the higher class of them, or the *hong* merchants, equal any Europeans in probity. Some of these amass immense fortunes.

Chinese Merchants.

The ancient history of China is enveloped in darkness and fable. According to tradition, China was governed, for many millions of years, by the gods, Tien-Hoan-Chi, and the fabulous families of kings, Ti-Hoan-Chi, Kiehu-Tohu-Ki. Amongst the latter was Fo-hi, the lawgiver of the Chinese, and U-ti, under whose family commences, with the reign of the celebrated Yau, the work called the *Shu-king*, from which the Chinese derive their early history. But the historical character of this book cannot bear criticism. The royal families of this obscure period are the Kia (till 1767 B. C.), Shang (till 1122), Chew (till 258). Wu-wang is invariably considered the founder of this last dynasty, but the accounts of its establishment differ. According to one account, the natives of the interior dethroned Chew-sin, the last of the preceding dynasty. According to others, Wu-wang came, with an army of foreigners, from the west, and introduced civilization amongst the natives. After the establishment of this family, there is a long chasm in the historical records. This the Chinese writers fill with fables. Under this dynasty is the Chew-kew, or period of fighting kings, who ruled over many little neighbouring states, and were continually at war with each other (from 770 till 320 B. C.). At length, a Chinese hero, Chi-hoang-ti, of the princely house of Ting, made his appearance, in the age of Hannibal, and with him commenced the house of Tsin (from 256 till 207 B.C.). He extirpated all the petty princes of the branch of Chew, and united the whole of China (247). He built the great wall as a protection against the Tartars. The empire was again dismembered, after his death, under his son Ul-shi, but was re-united, ten years later, by Lieu-pang. He adopted the new name of *Hang*, and founded the dynasty of Hang, which reigned till A. D. 220, and was divided into the western and eastern Hang (Si-Hang, from B.C. 217 to A.D. 24, and Tong-hang, from A.D. 24 till 220). The princes of this dynasty extended their conquests considerably to the west, and took part in the affairs of Central Asia. The religion of Tao-tse prevailed during their ascendency; and in the same period Judaism was introduced into China. In the course of time, the princes degenerated, and, under Hien-ti, China was divided into three kingdoms (220), which were again united by Wu-ti (280). He was the founder of the family of Tsin (265—420). The sovereigns of this family were bad rulers. The last, Kong-ti, was dethroned by Wu-ti, founder of the Song dynasty (420—479). A short time before this, a separate kingdom was formed in the southern provinces (386), called *U-tai*, or the five families. The Songs were likewise sovereigns of little worth. Whilst the whole aspect of Europe was changed by the general emigration of nations, two empires were formed in China, with the extinction of the dynasty of Tsin—one in the north (386), and the other in the south (420); the latter of which was likewise called *U-tai*, or the empire of the five families. In the latter reigned successively the family Song (till 479), Tsin (till 502), Lang (till 537), Tchin (till 589), Soui (till 619). The northern empire (386 till 587) was founded by the Goli Tartars, who conquered the northern part of China, and was governed by four dynasties,—two native and two foreign,—viz. the Goei, of the race of To-pa, and the Hew-Chew, of the race of Sien-pi. *a.* The dynasty of Goei reigned from 386 till 556 in three branches (Yuen-Goei till 534, Tong-Goei till 550, and Si-Goei or the western Goei, till 550); *b.* the dynasty of Pe-Tsi (the northern Tsi), from 550 till 557; *c.* the dynasty of Hew-Chew (the last Chew), from 557 till 581; *d.* the dynasty of Hew-Lang (the last Lang), from 554 till 587. Yang-Kien dethroned Hew-Chew (581), conquered the empire of Hew-Lang (587), of the Tsin (589), and founded the dynasty of Soui. The second emperor of this dynasty, Yang-ti, was dethroned by Li-ien (617), who founded the family of Tang, which maintained itself 300 years, and resided at Sia-gan-fu, in Shen-si. During the reign of the first emperors of this line, particularly under Li-ien's learned son Tai-tsong I. (626), China grew very powerful. But his successors gave themselves up to pleasure, and were entirely governed by their eunuchs. Internal distractions were the consequences. The last emperor, Tchao-siuen-ti, was dethroned by Shu-wen, who founded the dynasty of Hehu-Lang (907). This, as well as the succeeding dynasties of Hehu-Tang (923), Hehu-Tsin (936), Hehu-Han (946), Hehu-Tchew (957), was of short duration. These are called *Hehu-U-tai*, or the five last families. After this, China was torn by internal commotions, and almost every province had a separate ruler, when, in 990 the people elected the able Shao-Quang-Yu emperor. He was the founder of the dynasty Sing, or Song, which reigned till 1279. His immediate successors resembled him, yet the country suffered considerably by the devastations of the Tartars. Under Yin-tsong (1012), the Chinese were forced to pay tribute to the Tartar Leao-tsang. Whey-tsong overthrew the empire of Leao-tsang (1101); but the Tartars possessed themselves of the whole of the north of China (Pe-cheli), 1125. Kao-tsong II. was their tributary, and reigned over the southern provinces only. Under the emperor Ning-tsong, the Chinese formed an alliance with Genghis-Khan, and the Niu-cheng submitted to this great conqueror (1180). But the Mongols themselves turned their arms against China, and Kublai-Khan subjected them, after the death of the last emperor, Ti-ping (1260). Under the Tang dynasty, arts and sciences flourished in China; several of the emperors themselves were learned men. The Chinese authors call the Mongolian dynasty of emperors *Yuen* (from 1279 till 1368), and Kublai-Khan is by them called *Shi-tsu*. This was the first time that the whole of China was subjected by foreign princes. But the conquerors

conformed themselves entirely to the Chinese customs, and left the laws, manners, and religion of the country unchanged. Most of the emperors of this line were able princes. But after the death of Timur-Khan, or Tsing-Tsang (Tamerlane), 1307, and still more after that of Yeson-Timur-Khan, or Taiting (1318), divisions in the imperial family frequently occasioned internal wars, which weakened the strength of the Mongols. The Chinese Chu took up arms against the voluptuous Toka-mur-Khan, or Shun-ti, and the Mongolian grandees became divided among themselves. Toka-mur-Khan fled into Mongolia (1368), where he died (1379). His son Bisurdar fixed his residence in the ancient Mongolian capital Karakorum, and was the founder of the empire of the Kalkas, or northern Yuen. This state did not remain long united; but, after the death of Tokoz-Timur (1460), each horde, under its own khan, became independent; in consequence of which, they were, with few exceptions, constantly kept in subjection to China after this period. Chu, afterwards called *Tai-tsoo IV.*, a private individual, but worthy of the throne, delivered his country from the foreign yoke, and founded the dynasty of Ming (1368 till 1644), which gave the empire sixteen sovereigns, most of whom were men of merit. On the frontiers of the empire, the remains of the Niudshee Tartars, now called *Mantchoos*, still existed. The emperor Shin-tsong II. gave them lands in the province of Leao-tong; and, when an attempt was made, soon after, to expel them, they resisted successfully, under their prince Taitsu, and obtained possession of Leao-tong; upon which their chief assumed the title of emperor. He continued the war during the reigns of the Chinese emperors Quan-tsong and Hi-tsong, until his death. His son Ta-tsong succeeded him, and Hoai-tsong, a good but weak prince, was the successor of Hi-tsong on the throne of China. On the death of Ta-tsong, the Tartars did not appoint any one to succeed him, and discontinued the war. But in China, Li-tching excited an insurrection, during which Hong-Puan put an end to his life (1644). Li-tching's opponents called in the Mantchoos to their assistance. They got possession of Pekin, and of the whole empire, over which they still reign. Under Shun-chi, a child of six years old, the conquest of China was completed (1646—47), and the present dynasty of Tatim, or Tsim, or Tsing, was founded. He was succeeded, in 1662, by his son Kang-hi, who subdued the khan of the Mongols, took Formosa, and made several other additions to his empire. During the reign of this prince, the Christian religion was tolerated, but his son Yong-ching prohibited it in 1724. The son of the latter, Kien-Lung, continued the persecution against the Christians (1746—73). He conquered Cashgar, Yarkand, the greatest part of Songaria, the north-eastern part of Thibet and Lassa, the empires of Miao-tse and Siao-Kin-tshuen, and extended his territories to Hindostan and Bucharia. He peopled the Calmuck country, which the expulsion of the Songarians had rendered almost a desert, with the fugitive Torgots and Songarians from Russia. In 1768, he was totally defeated by the Birmese of Ava; nevertheless, the Chinese took possession of a town in Ava in 1770, and returned to their country with the loss of half of their army. They were more successful against the Miaotse (mountaineers). Towards the end of his reign, his minister, favourite, and son-in-law, Ho-Tchington, abused his influence over him. Kien-Lung was succeeded, in 1799, by his fifteenth son, Kia-King. His reign was frequently disturbed by internal commotions; for in China there exist secret combinations of malcontents of all classes. In their nightly meetings, they curse the emperor, celebrate Priapian mysteries, and prepare everything for the arrival of a new Fo, who is to restore the golden age. The Catholics, whom he favoured, have lost most of their privileges by their inconsiderate zeal, and at Pekin, the preaching of the Christian religion has been strictly prohibited. Kia-King was succeeded, in 1820, by his second son, Tara-Kwang, whom the Russians call *Daoguan*. The embassy of lord Macartney was not more successful in attempting to change the policy maintained by the court of China for more than 1000 years, than the Russian embassy of count Golowkin, or the more recent one of lord Amherst, the British ambassador, in 1816. The envoys were unable to form political or commercial treaties with this "celestial empire of the world," which treats all monarchs as its vassals. (See Staunton's *Miscellaneous Notices relating to China*, &c. London, 1822.) A history of China, translated from the Chinese of Choo-Foo-Tsze, by P. P. Thoms, many years resident at Macao, in China, was lately announced for publication. It is stated to commence with the reign of Fuh-he, according to Chinese chronology, B. C. 3000, and to reach the reign of Min-te, A. D. 300, including a period of 3300 years.

Chinese Language, Writing, and Literature.—The Chinese language belongs to that class of idioms which are called *monosyllabic*. (See *Languages*.) Every word of it consists only of one syllable. They may, however, be combined together as in the English words *welcome, welfare;* but every syllable is significant, and therefore is of itself a *word*. If the Chinese language were written, like our own, with an alphabet, it would be found to possess comparatively but few sounds. It wants the consonants *b, d, r, v*, and *z*. Every syllable ends with a vowel sound. The Chinese cannot articulate two consonants successively, without interposing a *sheva*, or English *u* short. Thus they pronounce the Latin word *Christus* in this manner, *Kul-iss-ut-oo-suh*. The number of syllables of which the Chinese language is composed is very small. According to Remusat, it does not exceed 252; but Montucci thinks there are 460. It is not, therefore, accurately known. But this number is quadrupled by four different tones or accents (some say five), of which an idea cannot be given by words. By means of these accents, the Chinese speak in a kind of *cantilena*, or recitative, which is not, however, much observed when they speak fast, in their ordinary conversation. It requires a nice ear to distinguish those varieties of tone. This language, consisting of monosyllables, is destitute of grammatical forms. The nouns and verbs cannot be inflected, and therefore the differences of tenses, moods, cases, and the like, are either left to be understood by means of the context, or expressed by the manner in which the words are placed in relation to each other, as in French, *sage-femme* and *femme-sage*. With all these deficiencies, if they can so be called, the Chinese understand each other perfectly well, and are never at a loss to express their ideas. Their extensive and varied literature is a proof of it; but this is generally ascribed to their writing, which, it is said, expresses more than their spoken language. But we do not concur with those who hold this opinion. We think that the spoken language is fully adequate to the expression of every idea, and that the written characters add nothing to its force. The enthusiasm with which some writers speak of the wonderful effects of the Chinese writings upon the minds of those who read them, has often reminded us of the *ocular harpsichord* of father Castel. The Chinese characters, like all others, represent the sounds, that is to say, the syllabic sounds or words of the spoken language; and through those sounds the ideas are communicated to the mind.

The writing of the Chinese, indeed, if we consider only the number of their characters, and compare it with that of their words, would seem to possess a very great superiority. There are not less than 80,000 Chinese characters; but of these only 10,000 are in common use, and the knowledge of them is sufficient to enable one to understand almost every Chinese book. It was once thought that it required a man's whole life to learn to read and write Chinese; but M. Remusat, the celebrated professor of that language in the royal college at Paris, has demonstrated by facts, that the Chinese may be learned in as short a time as any other idiom. The great number of these characters proceeds, in the first place, from the considerable quantity of homophonous words which exist in the Chinese. These are represented by different characters, as with us by different modes of spelling, of which the French words *cent, cens, sang, sans, sens, sent,* each having a different meaning, but all pronounced alike, are a striking example. Neither are homophonous words wanting in English, as *bow* and *bough, great* and *grate,* and many others. The Chinese characters, also, by being combined together, as it were, into one, express two or more words at the same time, and this, in a great degree, accounts for there being so many of them. The Chinese characters are all reducible to 214, which are called *keys* or *radicals* (in Chinese, *poo*), each of them representing one word, and each word an idea. By the analogy of those ideas the complex characters are formed—an ingenious contrivance, which facilitates very much the acquisition of the knowledge of them. Thus all the words which express some manual labour or occupation are combined of the character which represents the word *hand,* with some other, expressive of the particular occupation intended to be designated, or of the material employed. This has induced many of the learned, and even the Chinese literati themselves, to maintain that the Chinese writing is *ideographic,* and represents ideas in a manner unconnected with the spoken language; but this supposition is disproved by the fact that no two Chinese can read aloud from the same book without using the same words, which are precisely those which the characters represent. If it were otherwise, every person in reading would use different words, and the *written language,* as it is called, would be *translated,* not *read.* It must be added, also, that the Chinese poetry is in *rhyme,* and therefore addressed to the ear, and not to the eye. This shows that it is impossible for those who are ignorant of the Chinese language to read the Chinese writing, unless their own idiom should be constructed exactly on the same model with the Chinese, have the same number of words, with the same meaning affixed to each, and the same grammatical forms. It has been repeatedly asserted that the Coreans, and other nations in the neighbourhood of China, can all read the Chinese writing, and understand it, without knowing a word of the spoken language; but this appears impossible. It is more reasonable to suppose, either that they have adapted the Chinese characters to their own idioms, or that the Chinese is among them, as Latin is with us, a learned language, which is generally acquired as a part of a liberal system of education. The Chinese characters are written from top to bottom, and from right to left. The lines are not horizontal, but perpendicular, and parallel to each other. The Chinese literature is rich in works of every description, both in verse and in prose. They are fond of works of moral philosophy, but they have a great many books of history, geography, voyages, dramas, romances, tales, and fictions of all kinds. Several of the latter works have been lately translated in England and France. The books called the *Kings,* ascribed to their great sage Confucius, are now in a course of translation. The works of his successor, Meng-Tseu, have been lately published at Paris in the original, with an elegant Latin translation, in two octavo volumes, by M. Stanislas Julien. Other translations from the Chinese are in progress, both at London and Paris, under the patronage of the Asiatic societies of those capitals. The king of France has established a professorship of Chinese in the royal college at Paris. This chair is now filled by the learned Remusat, who has already formed several distinguished pupils. The study of the Chinese language appears to be now pursued with great ardour in Europe, and with remarkable success. The reverend Mr Morrison has published a Chinese grammar, and a dictionary of the same language, in 4 vols. 4to; the former printed at Serampore, the latter at Macao, and both difficult to be procured. M. Remusat has published at Paris an excellent grammar of that language. The manuscript dictionary of father Basil de Glemona was translated into French, and published at Paris, by M. de Guignes, under the patronage of the emperor Napoleon, in the year 1813, in one thick folio volume, to which a valuable supplement has been since added by M. Klaproth. Auxiliary means are not now wanting for those who are desirous of learning this curious idiom.

CHINA-WARE,* the finest and most beautiful of all the kinds of earthen-ware, and so called from China being the country which first supplied this material to the Dutch and English merchants. It is likewise called *Porcelain,* as some suppose, from the Portuguese *porcellana,* a cup or vessel; but Dr Whittaker suggests, that the name may have arisen from the tint of the early specimens brought to Europe, resembling the flower of the *Purslain,* a light pink.

China-ware, when broken, presents a granular surface, with a texture compact, dense, firm, hard, vitreous, and durable; semi-transparent, with a covering of white glass, clear, smooth, unaffected by all acids, excepting the fluoric, and sustaining uninjured a sudden rise of temperature. In the properties of being semi-transparent and semi-vitrified, but in scarcely any of the preparatory processes and manipulations, is *china-ware* distinguished from good *earthen-ware.* Various articles for the use of the table and the toilet, are usually formed of china-ware, as also *chemical utensils,* retorts, alembics, crucibles, dishes, and many other articles indispensable in the laboratory.

Progress of the Manufacture.—The manufacture of porcelain by Europeans, did not commence till the beginning of the eighteenth century, although the knowledge of its value existed prior to the Christian era; for we find that Pompey's soldiers carried some from Pontus to Rome, B.C. 64. The existence of the manufacture of clay into vessels, in Britain, long prior to that date, is proved by the discovery of earthen-ware vessels, certainly not choice specimens of workmanship or taste, but adapted for purposes of domestic utility; and, if we allow any weight to the circumstance of different excavations in several pottery towns in Staffordshire, indicating a long abstraction of their contents for purposes of the manufacture, and also regard the fact that one of those towns has a name which plainly determines the practice of the art—*Burslem-Bwlyeardslyme,* the *plot* of ground where is quarried the *clay* for *bowls;* and that the *Tygel-wyrthan,* the workers of tygs, drinking vessels or cups, (not the makers of *tiles,* of which very few then were needed) were residents in the dis-

* This article has been written expressly for the present work, and contains an account of the latest improvements in the manufacture of china-ware.

trict, their offspring being still called *Telwrights*—then we must admit that the manufacture was in operation in Staffordshire prior to the Saxons' gaining supreme power in the kingdom. In tracing the history of the practice of employing clay in the different kinds of ware, it is to be remarked that the early potters regarded merely the appearance of the baked *body*, or *clay material*, the proportions of the component, being directed by caprice. The early specimens appear to have been vitrified, to preclude porosity and brittleness; their formation indicates infancy in the manipulations, and a composition of not more than two materials, varied in quantities as their utility became more known. Many are to be seen in a museum at Burslem, where Mr Wood has arranged them in accordance with dates, or eras of fifty years each. Previous to the 17th century, there existed little knowledge of the advantages resulting from *combination of clays*; but after that period, some specimens, distinguished for beautiful shape, tasteful ornament, and durability, with the names Thomas Toft, and Thomas Sans, and the date 1650, were made of a compound of brick clay, and the alumine or slate clay of the Burslem coal mines, and this compound was subsequently much employed in an improved ware called *scrolled* or *scrodled ware*.

The process of covering the ware with a glaze by means of the combustion of common salt, causing the fusion of the silica and iron in the clay, had long existed on the continent; but it commenced in Staffordshire about 1680, in consequence of Mr Thomas Palmer, of Bagnall, seeing an earthen vessel of his own manufacture, with the surface accidentally semi-vitrified, by the heat and salt of a boiler for pork pickle. The process, during many years, was practised on all coarse brown ware, and some other kinds, and is continued at Lambeth, Bristol, Church Gresley, and Chesterfield. The common brick clay, and excess of decomposed slate clay, with fine sand intermingled, by Mr William Miles of Hanley, produced *white stoneware*; and dusting the pulverized ores of lead and manganese over the surface in the first state, formed the *brown stoneware*. The combustibility of the lead promoted the fusion of the silica on the surface, and some employed manganese and salt. In Burslem, a different kind of ware was made by mixing the marl, where the coal bussets, or crops out, with the finely pulverized millstone gritt of the moorland ridge. This is the *crouch ware*, which, when glazed with salt, appears compact, clean, and durable; and, at this day, the thin pieces, by vitrescence rendered semi-transparent, excite surprise that they failed to suggest the manufacture of porcelain.

About 1690, the brothers Elers of Nuremberg, from the Chesterton brick clay, and the fine red clay of Bradwell and Brownhills, manufactured *red porcelain*; also a *black ware*; and it would seem, that this latter, now called *Egyptian*, was suggested by the appearance of some parts of the red ware, which contained excess of iron, being left of a dark colour when baked. We know not who first introduced the practice of mixing fine grit with Devonshire clay, and when at a certain heat, by adding salt for the purpose of glazing the surface, transformed crouch ware into the best *stoneware*, having all the essential qualities of the finest Japanese porcelain. Mr Astbury, of Shelton, by mimicking the idiot, obtained employment under Messrs. Elers, and made himself acquainted with their peculiar processes. He afterwards manufactured *white stoneware* from the Shelton marl and Devonshire clay; he also made *white dipped ware*; and being required to visit London on business, a disease of his horse's eyes, at Dunstable, being cured by the powder of a calcined flint, he noticed its white appearance, adopted it among the materials used to wash his vessels; but, erelong, he mixed it with the Devonshire clay, to form the first *white pottery* or *chalk body*. His son, Thomas Astbury, by mixing the marl of Fenton Calvert, instead of the Shelton marl with Devonshire clay, formed the first *cream-coloured stoneware*. During the period of Mr Astbury's improvement of the earthen-ware, the apprentice of a druggist in Saxony, having obliged one of those self-deluded persons who sought for the *elixir vitæ*, was, in return, made acquainted with some of the processes employed for chemical purposes. The youth deserted his master to pursue his chimeras, but was brought back, and incarcerated, but supplied with whatever he required; and here he transmuted rocks into a ware, more valuable to his country than would have been the phantasms he sought—*the powder of projection, and the philosopher's stone*, and for which he was ennobled as the baron de Botscher. This is the *Dresden china*. This invention caused a great sensation in France and Prussia; and Reaumur, by indefatigable researches into the nature of the oriental and Dresden chinas, supplied that information which raised the *Sevres china* to a degree of beauty and elegance, greatly surpassing all that had been previously manufactured.

The elegant shapes of the French china surprised the British manufacturers; and moulds in brass or very strong clay were made for the purpose of imitation. But the first knowledge of the subject in England was received through the medium of Ralph Daniel, of Cobridge, who left his home and went to Paris, where he was employed quickly as an expert thrower. Here he ascertained that all the moulds used in the French manufactories were of plaster of Paris, and his information caused the practice to be adopted by the English potters.

Mr William Littler, about 1750, commenced making a semi-transparent ware, which he called *china*; and, in accomplishing his purpose, he expended his patrimony, the Brownhills estate, Burslem. But his productions are every way very different from the china which, about the same date, was made at Derby by the ingenious Mr Dewsbury, and which now continues in considerable demand. At Worcester, also, china of a very superior quality is manufactured, without other aid than the genius and enterprise of the proprietors. And, in more recent times, the china made at Coulport, Salop, has obtained much celebrity.

The combination of different clays with metallic oxides, iron, manganese, and lead, by Thomas Whieldon of Fenton, and others, produced *tortoise-shell ware*, and imitations of agate for knife-hafts, and snuff-boxes; and here Josiah Wedgewood made his first essays at improving the manufacture. But, previously,

Thomas and John Wedgewood, of Burslem, carried forward the manufacture of white stoneware, salt-glazed, and formed into a great variety of ornamented utensils, to such an extent, as to realise a very large fortune for their descendents; and when they retired from business, they transferred it to the person who had married their niece, Josiah Wedgewood, who afterwards obtained so much celebrity for his improvements in the arts, and of whom an ample biographical notice will be given under the head, *Wedgewood, Josiah*. Mr Aaron Wedgewood, father of Thomas and John Wedgewood, and Mr W. Littler, adopted a mixture of fusible materials for glazing their ware, and which they applied by brushes to the surface, or by immersion, while the vessels were in the clay state; and this practice was becoming general, when, most opportunely, Mr Enoch Booth of Tunstale, about 1750, who was then making ware of a combination of the na-

tive clays, carefully washed, and afterwards mixed with those from Devon and Dorset, and some ground flint, availed himself of Reaumur's glazes (see the old editions of the *Handmaid to the Arts*), and completely changed the *modus operandi* of the manufacture. His ware was baked once, and, after being carefully sorted, only all the perfect ware was then immersed carefully in the fluid mixture of the components, and when again baked received, from the tint, the appellation of *cream-colour*. This method is now general. Mrs Warburton, of Hotlane, Burslem, improved the quality of the glaze, and Josiah Wedgewood improved the quality also of the ware, and thus formed what was the basis of his fortune—the very noted *queen's ware*.

Mr J. Wedgewood first introduced into the components of one kind of earthenware, *jasper*, the sulphate of barytes, or cauk-stone, and this ware remains unrivalled in its fabric, particularly for chemical utensils. This is his only addition to the materials of the manufacture. His employment of the most intelligent workmen was consequent on his commencing the imitation, in his jasper, of the medallions, cameos, &c. of the best artists.

There is much probability that inspection of the specimens in the museum of the Royal Society, of the pe-tunt-se and ka-o-lin of the Chinese potters, which Dr Sherard had supplied, suggested to Mr Cookworthy of Plymouth, the examination of the *granen* of Cornwall. He first announced to English potters, that the felspar (melting spar, which, in the white granite of Cornwall, is combined with quartz and mica,) supplies the most essential component of the oriental china; then obtained a patent for its use in the manufacture, which right he transferred to Mr Champion of Bristol, who, failing in his attempts to manufacture china in that city, disposed of his interest in the patent, to some persons in Staffordshire, ever since known under the appellation of *the New Hull Company*.

We know not the name of the person who first introduced into the clay for china, a certain quantity of the *earth of bones* to aid the semi-transparency, and named *bone china*; and also, of him who first employed ground *granen*, (under the name of *composition*, supplied by the New Hull Company,) in that of the best earthenware, from its whiteness called *chalky body*. The ornamenting of ware by blue painting was next added to previous improvements. Mr Cookworthy had previously attempted a shining blue glaze; and, afterwards, he instructed Roger Kinnaston to prepare blue, from either zaffres or cobalt ore; and the business is now of great importance and value. This was accompanied by the process of using gold, which will bear the burnisher, first brought to perfection by Mr Hancock, of Etruria (yet alive, 1834); and who, subsequently, invented the *lustre*; which was improved to imitate *silver*, by John Gardner, Stoke; and *gold*, by William Hennys, Burslem. And *black printing* was successfully practised by Sadler and Grier, Liverpool; W. Smith, and T. Radford, Hanley. John Turner, Lane End, produced *stone china*; and John Lucock (still alive) introduced *blue printing*, under glaze.

At Lane-End, in 1795, Mr Cheatham produced the *pearl* ware, named from being in white ware what the jasper is in coloured. In 1800, Mr Turner, of the same town, produced the *patent stoneware*; afterwards imitated by Mason's *patent ironstone china*. Mr Winter, of Tunstale, made a boast of producing the only *true porcelain* of the potteries (certainly a soft kind). Mr Josiah Spode produced bone china of considerable excellence from 1800 till 1820, when he commenced an improvement entitled to special notice. Mr Ryan, F.S.A., discovered, in a deserted lead mine, *felspar* in the two states which the Chinese call pe-tunt-se and ka-o-lin, or rock and clay. After an offer of the spar to Messrs. Rose, of Coalport, (who denounced it as useless, though they have used it since,) Mr Ryan got it tried by Mr Spode, Stoke, and this person's satisfaction with the result was so great, that he purchased a supply which is still used in his manufactory. In the present state of matters there is every possibility of carrying the manufacture to a degree of excellence which will gratify the expectations of the most sanguine friends of science. The resources of the manufacturer have been greatly augmented by scientific research in recent times. The analysis of minerals by the chemist shows that the earth teems with treasures calculated for the advancement of the art, and that her bounties will ever amply remunerate the labours of the patient inquirer. Of these, every one who aspires to the character of a scientific potter should avail himself, not knowing what fortunate combination of materials he may yet discover, or what improvement he may make in the art. It was by attention to the relative qualities of different substances that the early manufacturers succeeded in raising the art to its present state of excellence, and by a continuance of similar attention it may advance still nearer to perfection.

The following is a description of the materials and processes of the manufacture of china and earthenware, in the present improved state of that art:—

Properties and Materials of different China and Earthen Wares.—The remark of Vauquelin, that "good pottery differs from inferior, much less in the number of its components, than in their being combined in proper proportions," applies with equal force to the *soft* and the *hard china wares*. Their basis is a mineral which bakes very white, and which, either alone, or when in combination with other components, from undergoing incipient vitrescence, becomes semi-transparent. The basis of earthenware is clay and flint in determined proportions. The recipes subsequently introduced, will exhibit an accurate view of the different components. As the hardness, infusibility, and unalterability require the presence of flint, so only will firmness and ready baking, as well as adequate plasticity for easy working, be obtained by the presence of clay; for excess of either is injurious.

The Japan china is considered superior to all other of oriental manufacture, in its close and compact granular texture, its sonorosity when struck with a hard body, its hardness like flint in giving sparks with steel, its infusibility by baking, its smooth and shining appearance, and its capability of being used to boil liquids, and bearing higher temperature without any injury. Its components are, per cent., fifty pe-tunt-se, and fifty ka-o-lin. Only in very recent times has the fact been ascertained, that these were the *chief* components, but not the *only ingredients*.

The *pe-tunt-se* has its appellation from being an impalpable powder formed into square cakes. Fragments of a kind of rocky mineral, of which the greenish is the best, (now proved to be *felspar*, with a small portion of protosulphate of iron,) are forcibly agitated in vessels of water until the particles abraded render the fluid frothy; the foam is skimmed off, and put into another vessel; and this process is repeated with the mass till it ceases to supply froth. The skimmings are left to subside, and when the water is quite transparent, it is drawn off carefully, the powder is slowly dried, and then formed into cakes, in size and thickness much like floor-tiles. Reaumur found it fusible at a moderate heat, without addition, and readily vitrifiable.

The *ka-o-lin*, is so called, from being in a state by nature, almost ready for the manufacturer. It is found in beds, and is obviously felspar, reduced by atmospheric action into the state of clay. It is, by abrasion, similar to the pe-tunt-se, formed into foam, allowed to subside, and then cut into squares. In combination with the other, they promote the consolidation of the two. Reaumur was unable to fuse it by any heat he could employ.

The pe-tunt-se and ka-o-lin are next mixed with an equal proportion of aluminous earth; and this is indispensable, as well to render the *clay* plastic for the working, as to make it ductile and tenacious to bear the manipulations of turning and handling, or moulding. These are mixed well together, and then thrown into a large pit, in which they are, by treading, more intimately commixed; and from this pit, portions are taken when wanted, and rolled in various ways, to disperse all air bubbles, and render the clay homogeneous. Only when these processes have been properly conducted, will the clay afford a ware which will bear, without injury by warping, cracking, or fusion, the further processes of ornamenting and baking.

The splendour and whiteness of china depend mainly on the *glaze;* which is stated to be formed of the whitest rock which supplies pe-tunt-se, treated similarly to the others. To 100 pounds' weight of this white powder, is added one pound of *the powder* of *che-kao*, a saline fritt, much like gypsum, or alum; also 100 pounds of lime and ashes, with another pound of the salt; these are formed into fluids having like specific gravity; and then ten of the former is mixed with one of the latter. With the Chinese potters, the preparation of the clay is constantly in operation; and usually remains in the pits from ten to twenty years prior to being used. The longer it has remained there, the more is its value; and instances are not unfrequent, of one potter manufacturing his ware from clay first prepared by his grandfather.

The *hoa-chè* china, a very expensive kind, which has its name from its glutinous appearance, in addition to the petuntse, kaolin, and alumine, has *steatites*, (soap-stone, doubtless from its *saponaceous* quality,) washed from its impurities, oxide of iron, &c. then pulverized, abraded in water, and treated similarly to the others; and, in consequence of this component, although its grain is very fine, and its delicacy and beauty extreme, when among the component parts of the glaze,—presenting opportunity for superior decoration by ornament,—the ware is brittle, deficient in weight, and only by great attention properly baked.

The best *Persian china*, of Shiraz, is equal to that of Canton in every property, and superior in some particulars; it is, consequently, substituted for that frequently by the Dutch merchants, and requires some judgment to be distinguished as not Indian merchandise. That its material is *felspar* is obvious from its fracture presenting a fineness of grain, and a semi-transparency similar to the Chinese; and also, because it will bear to be used as moulds for casts, and as vessels in which fluids may be boiled, or minerals pulverized.

The *Dresden* or *Saxon china* has some qualities which render it decidedly superior to the oriental. Its fracture certainly does not exhibit a granular texture, but a compact, shining, uniform mass, resembling white enamel, proving that it is compounded of one kind of materials, which by fusion will cause its density, smoothness, and superior lustre; and another infusible, whence result its beautiful white appearance, firmness, and solidity. These, in combination, regularly contract together, and form china more firm and compact than those of China and Japan, yet equally hard to give sparks with steel, sonorous when struck with wood or the hand, and not fusible by any heat employed in baking.

At Naples and Florence, beautiful china is made, approaching in excellence that of Japan and Canton. While at Berlin, Frankendal, Vienna, and other places in Germany, china is made of the same materials as are used for the Dresden; but, by varying either, or both proportions, as well as processes, they differ from each other, and also from that of Dresden.

The invention of French china manufacture is due to Reaumur; and establishments are formed at Paris, Villeroy, and Orleans. That of Sevres has a grain neither so close nor so fine as that of Japan; but much like lump sugar; and excelling all the others of French fabrication in its white shining lustre, its fine glaze, elegance of shape, beautifully coloured grounds, and magnificent gilding. *Reaumur's porcelain* is manufactured of pulverized common glass and fluxes, or of vitrescent stones and saline fluxes.

The requisite minerals for the components of the best *hard* China, are sparingly supplied by nature, and, therefore, secures an additional value to the ware; while those which are employed in the several kinds of earthenware, are not uncommon in most countries. Silica and alumine, whether mechanically or naturally combined, do not vitrify together, although they more readily and frequently combine than any of the other earths: it is supposed, that, in these combinations, silica exercises the properties of an acid, and alumine those of a neutralizer, though not strictly an alkali. Silica, when pure, is transparent, and, when calcined, loses much of its adhesive property; and, even in its pulverized state, communicates to the ware hardness, firmness, and unalteration by baking. Alumine is opaque, and retentive of water at extremely high heats,—4717° Fahrenheit, or which fuses silver. When silica and alumine are properly combined in water, their reciprocal tendencies cause strong adhesion, so that, when hardened merely by evaporation into a paste, they resist decomposition by the atmosphere; and, when they have been subjected to the heat requisite to dissipate the water of the mass, in which 46 per cent. of the weight is lost, there remains a body durable, firm, and unaffected by change of temperature. The silica requisite is obtained by using the *flints* from the Sussex coast, and near Antrim, Ireland. The best for the purpose have a blackish appearance. They are first calcined in a small kiln, in form similar to those large ones used for limestone; next they are broken in pieces while hot, and cast into water in the pan, in which, by mechanical power, they are abraded together, till the mass has the consistence of cream, with a density of 32 oz. per ale pint. When again dried at 4688° Fahrenheit, 27 per cent. is lost. The alumine is supplied from four kinds of clay,—two from Biddeford, and other two from the Isle of Purbeck, that is, *pipe clay;* the fracture is earthy, to the feel they are greasy, adhering to the tongue; baking into a white substance, more tenacious and plastic, and, though not easily fused, more fusible than porcelain clay. The names of *blue, brown, black,* and *cracking*, are applied according to their properties. The *blue* has more force, with a certain quantity of flint, than any of the others; and, while contracting little, form together a white durable ware. The *brown* contracts rather more than the blue, yet supplies a very white ware when in biscuit; but the sulphuric acid it contains causes great attention to the components of the *lead* glaze, else *crazing* will ensue. The *black* has carbonaceous particles admixtured, which, by baking, lose their acid, and are not regarded as injurious. And the *cracking* produces a fine white ware; but, from its excess of alumine, so much contracts by baking, that it only can be safely used in combination with a certain proportion of blue clay. As very accurate experiments determine that a vessel formed of any of the native clays alone, will contract, from evaporation, till sufficiently dry for baking, at least one-tenth in dimension, there cannot be further reason desired, to prove that plus of alumine, which readily is bibulous, prevents a vessel being durable and firm. The *grauen*, or Cornish granite, a natural mixture of quartz, mica, and felspar, is used in large quantities. It is ground similarly to flint; and when dried on small kilns similarly to the plaster of Paris, is often called *composition*. The quartz prevents too great contraction of the ware during baking; and the felspar, having 16 per cent. of potass, renders the mixture more readily vitrescent by baking, and so promotes the compactness of the ware. The mica has 4 per cent. fluate of lime; and although this is but a very small quantity, its potency as a flux promotes vitrescence, and its acid intimately combines with the silica, until a rise of temperature, and the presence of water, produce a re-tendency to action. This is a latent cause of *crazing*. The *china clay* of Cornwall, first introduced by Mr Cookworthy, is the extremely white and impalpable powder, by running water washed off broken pieces of the blocks of decomposed white granite, collected in catch pools, from which it is at certain times taken, dried, and forwarded to the potters. The washing separates the quartz and mica, and also much of the potass, which causes the clay to be infusible. But all the clay in this state is not alike in quality: some has more potass in the felspar, and is moderately fusible at a white heat; while others remain refractory in any heat of the potter's oven. In 1834, Mr Ryan introduced a native clay for china, which possesses all the essential qualities of the Japan kaolin. Most of the English china contains the earthy residue of *bones*, boiled, to extract all gelatinous ingredients, next calcined, and then ground similarly to flints. This component, by increasing the porosity, aids the semi-transparency, and supplies additional whiteness, by the phosphoric acid correcting any iron in the other components. This is the latent cause of china seldom hearing a sudden rise of temperature, or sudden change. *Magnesian clay*, in its indurated state, as soap rock or steatite, and also in its plastic form, from their decomposition, has been occasionally used to improve the whiteness of the body or ware. It has a cream colour, strong earthy odour, minutely foliated texture, slight greasy lustre, takes a polish from the nail, stains the fingers, is very friable, smooth, unctuous, and plastic to the touch, and, on the tongue, dissolves into a pulp free from gritty particles. Only when adequate aid results from alkaline components, can this be used, because its pulverulent nature renders it deleterious in the clay. There are also used considerable quantities of *slate clay* and *shule clay*, used for different purposes hereafter explained. The colour of the slate clay is from ash grey to ochre yellow; it has foliated texture, is unctuous and smooth to the touch; scarcely gritty between the teeth. The kind found in thick strata is darker coloured and less plastic than that from thin strata. And that obtained from peat mosses is rather white ash-coloured. The *shule clay* is varied from greyish blue to bluish black, with foliated texture, smooth unctuous feel, bears to be polished by the nail, small gritty particles, very tenacious and ductile; and, taken from the hasseting of the coal strata, to be used for saggers, and other purposes. This *marl*, as it is called in the potteries, is the upper casing, or *roofing*, of the coal strata; while another kind, called *clunch* clay, is the *flooring* of the strata. The *brick* and *tile* clay has a colour from yellow to dark red, blue, and green; and, while very plastic, adhering to the tongue, soft and greasy to the feel, and a fine earthy fracture, supplies a common material for coarse pottery, and as a component for black, brown, and lustre wares.

Composition of China and Earthenware.—Modern chemistry has thrown much light on this subject, not only in enabling us to analyze more perfectly the bodies which constitute these wares, but also in determining the exact proportions in which they combine; and we shall introduce a series of recipes, the result of the combined researches of the chemist and practical potter. The accuracy of these

recipes, which are given in centesimal proportions, may be implicitly relied upon.

No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Bone	40	50	40	37	20	45	42	64	40	46	28	25	35	29	37	34
China Clay....	35	35	20	25	43	23	30	20	20	20	7	16	25	8	31	32
Cornish Stone	23	8	40	13	24	22	27	16	24	28	40	25	40	40	25	23
Flint	2	3	..	25	..	..	1	..	6	..	5	9	..	5	2	6
Blue Clay ..	..	4	..	..	8	10	..	..	10	6	20	25	..	18	5	5

To each 100 lbs. add 1 oz. of best cobalt blue, ground.

The above are only *mixed* together, to constitute the clay. Other china bodies have much of their substance *fritted*. This process is adopted to chemically combine all the principal components together, by subjecting them, during some hours, to a gradually-raised temperature; and which, dissipating the aqueous, gaseous, carbonaceous, and other volatile ingredients, effects their complete fusion, and renders more readily obtainable all the properties of the several minerals in the compound. Wherefore, the fusible components must be in definite proportion to the others; and, unless this process was employed, there is a possibility of the high heats of the baking volatilizing the alkali before complete fusion ensues. The *fritt* is ground (similarly to flint) into an impalpable powder, in which state it is mixed with the other components that do not require to be fritted, in such proportions that there may continue a state of tenacity to bear the manipulations of throwing, moulding, or pressing.

The four annexed recipes are in common use by the persons whose names are affixed to them:

(1) *Fritt.*—Cornish stone, fifty; bone ash, fifty: grind and mix for *body*,—fritt, seventy-five; dry flint, five; blue clay, 20.—*J. Mare.*

(2) *Fritt.*—Cornish stone, forty; bone ash, forty; cullett, twenty: grind and mix for *body*,—fritt, eighty; blue clay, twenty. Bake very highly.—*J. Clowes.*

(3) *Fritt.*—Cornish stone, twenty-two; flint, twenty-eight; cullett, twenty-eight; white lead, twelve; salt, three; borax, six; blue calx, one: grind and mix for *body*,—fritt, forty; china clay, forty-eight; blue clay, twelve.—*J. Pennington.*

(4) *Fritt.*—Cornish stone, forty; bone, twenty-nine; cullett, twenty-two; borax, nine: grind and mix for *body*,—fritt, forty-eight; china clay, thirty-eight; blue clay, fourteen.—*W. Marsh.*

The constitution of these bodies intimates a more dense and compact texture than the preceding; and the attempt itself is a most useful lesson in chemistry, when properly and steadily pursued.

The china now most esteemed for all the properties of the Japanese, and superior beauty of colour, has felspar among its components, in the proportions below:

Felspar	20	20	30	25	20	20	24	10	22
China Clay	20	25	30	25	30	25	26	20	30
Bone	60	45	40	50	35	55	50	60	48
Cornish Stone ..	..	10	..	..	15	..	..	10	..

Stain with blue calx, as previously directed.

When such an excess of bone earth is present, as some of the recipes exhibit, there need not be any surprise that even very excellent felspar porcelain (to appearance), frequently fails on sudden rise of temperature.

Some china of this kind, very superior in quality, is made by part of the components being prepared in *fritt*. The two recipes annexed, exhibit the components and their proportions:

(1) *Fritt.*—Felspar (greenish), seventy-five; borate of soda, twenty; muriate of ammonia, five. *Body.*—Fritt, fifty, china clay, fifty; or, fritt, fifty; china clay, thirty; bone, twenty.

(2) *Fritt.*—Felspar (greenish), sixty; borax, twenty-five; nitre, five; sal-ammoniac, ten. *Body.*—Fritt, forty-five; china clay, forty; bone, fifteen: or, fritt, thirty-five; china clay, thirty; bone, thirty.

A particular kind, called *stone china*, is compounded (mostly for jugs and toilet services) of the following components:

No.	1	2	3	4	5	6	7	8
Cornish Stone ..	48	48	50	40	37	38	36	56
China Clay	27	30	33	30	28	30	32	30
Blue Clay	18	14	10	15	20	20	22	10
Flint	7	8	7	15	15	12	10	4

The *ironstone china* is formed by introdncing ground *clay* from the smelting furnace, in the proportion of twenty-eight for seventy-two of No. 3 or 8, carefully blunging the fluids together.

Dry bodies.—That class of wares which undergo incipient vitrescence, without any glaze on their surface. Of this species, the *red* and the *cottage brown* are compounded as below; the materials being well levigated, finely lawned, and carefully fired.

	Red.					*Brown.*				
No.	1	2	3	4	5	1	2	3	4	5
Bradwell Wood Clay	25	25	40	25	40	60	80	50	48	60
Yellow Brick Clay .	50	5	55	10	60	10	14	33	20	20
Blue or Black Clay .	..	50	..	40	..	22	..	..	16	10
Flint	25	20	5	25	..	8	4	..	..	..
Ochre or Manganese	..	..	..	..	..	..	4	17	16	10

Many flower pots and lustre jugs are formed of 3 and 4 red; and 4, 5, brown. Another kind of *red* is seen in the *porous body*, used for coolers of water, butter, and wine, and called *alcarazas* in Spain. These articles are baked in a very slow part of the oven; and, after being immersed in water till saturated, on any substance being placed thereiu, the cold caused by evaporation reduces the temperature of that substance to a most palatable state. The components stated as forming those used in Spain, are sixty parts of compact marl (Jamieson II. 194), and thirty-six and a half of decomposed common hornblende. But in Staffordshire, the following are the components:

	Fawn.	
Indurated Marl (Filcher's) ...	88	84
Brown or Blue Clay	9	10
Flint	3	6

	84	86
	8	8
	8	6

	88	86
	10	8
	2	6

The marl must be well weathered (several months exposed to the action of the atmosphere), and the fluid mixture passed through a fourteen lawn; after which the other components are added. The articles are baked in the top of the oven when baking *glaze*.

The several shades of *drab* are thus compounded:

No.	1	2	3	4	5	6
Indurated Marl	23	22	43	44	45	26
Cornish Stone.....	45	40	45	45	42	..
China Clay	..	12	6	..	..	20
Blue Clay.....	23	24	6	10	8	40
Bone Earth or Flint ..	8	..	..	..	4	f.12
Manganese or Nickel ..	n1	m2	..	m1	n1	..

The *cane* (much similar to baked pastry) supplies many articles, from moulds likewise employed for jasper and pearl. The components are:

No.	1	2	3	4	5	6	7	8
Black Marl	58	44	56	60	64	64	60	76
Cornish Stone	12	32	22	24	20	18	18	12
Brown or Blue Clay ..	..	24	22	16	16	18	22	12

The *Egyptian*, *best black*, or *vitrified basalts*, is formed of these components:

No.	1	2	3	4	5	6	7	8
Blue Clay	46	53	50	37	40	40	48	44 stone.
China Clay	2	..	3	10	..	6	10	4
Calcined Ochre ..	44	33	36	50	40	35	24	44
Manganese.....	18	2	3	3	5	5	6	8
Black Marl	..	12	8	..	15	14	12	..

The *pearl* is formed of these components, and is baked in the first ring of the biscuit oven, carefully raised and cooled:—

No.	1	2	3	4	5		6	7	8	9	10
Cornish Stone....	60	52	54	54	60		50	46	60	66	54
China Clay.....	22	38	36	21	20		..	14	10	8	..
Blue Clay.....	14	5	4	16	12		38	24	18	15	30
Ground Flint Glass	4	5	6	6	8	with Fritt	(1) 12	(2) 16	(3) 12	(3) 11	(4) 16

Or (1) *Fritt*—Flint Glass, 76; Red Lead, 22; Borax, 2.
— (2) *Fritt*— Do. 62; Do. 29; Do. 4; Nitre, 8; Flint, 6.
— (3) *Fritt*— Do. 80; Do. 20;
— (4) *Fritt*— Do. 70; Do. 24; Do. 6.

The *jasper* is compounded either by *fritt*, or without it; but the components require to be *ground* well together, before they are evaporated on the slip kiln.

No.	1	2	3	4	5	6	7		8	9	10	11
Cornish Stone	33	32	20	..	20	24	34		..	..		
Cauk Stone..	27	45	28	35	36	30	20		32	..	30	34
China Clay..	17	..	14	..	15	14	16		18	37	18	30
Blue Clay...	17	18	18	35	20	22	23		18	13	20	6
Bone Earth..	..	..	4	17	..	..	..					
Flint or Glass	4	3	4 g 6	9	6	6	5	with Frit	(1) 32	(2) 50	(3) 32	(4) 30
Blue Calx ...	2	2	6	4	3	4	2					

Or (1) *Frit*—Cornish Stone, 40; Gypsum, 30; Flint Glass, 25; Blue Calx, 6.
— (2) Do. — Do. 50; Do. 50.
— (3) Do. — Do. 35; Do. 26; Flint 16; Bone, 15; Do. 5.
— (4) Do. — Do. 40; Do. 40; Do. 6; Fl. Glass, 12; Do. 2.

This is never glazed, because the heated sulphuric acid of the cauk stone will decompose the glaze; even were it not formed of components in which the phosphoric, arsenic, or boracic acid, was present and ready to affect the acid of the barytes.

The *stonewares* of the best kind are thus compounded, and require to be baked in the first ring of the biscuit oven :—

No.	1	2	3	4	5	6	7
Cornish Stone....	48	68	40	38	52	48	45
Blue Clay.....	25	28	30	20	24	24	21
China Clay	24	..	10	12	24	12	18
Flint.....	..	..	5	18	..	12	10
Ground Glass	3	4	15	11	..	4	6

The *chemical utensils'* body, so important to the students of analytical chemistry, has not received all the attention its utility demands. The charge is enormously high, compared with that for other wares: yet scarcely any is found to bear the raised temperature of a wind furnace. The components (according to the recipes at present used) are: —

No.	1	2	3	4	5
Cornish Stone...	48	28	10	40	33
China Clay	24	..	20	20	20
Blue Clay.....	24	54	50	25	25
Indurated Marl..	2	10	..	5	11
Flint	2	8	20	10	11

To counteract the effects of the different chemical preparations on the vessels, ground biscuit china is mixed in the proportion of forty to fifty per cent. with the preceding bodies; but, the addition of six per cent. sulphate of barytes, has recently been proved of the greatest utility.

Earthenware Bodies.—Some previous remarks intimate the want of scientific knowledge on this subject by the manufacturers. To prove that they were not without a good foundation, the following recipes are given from a MS. very recently written by the superintendent of a large manufactory :—

1. Black clay, six barrowfuls; blue clay, four barrowfuls; cracking clay, two barrowfuls; when in slip, add six china clay, two one-fourth stone, ten flint.

2. Black clay, three barrowfuls; brown clay, two barrowfuls; blue clay, two barrowfuls; corn stone, forty pounds. In slip, to six, add one flint.

3. Blue clay, sixteen pailfuls, twenty-four ounce to pint; China clay, four pailfuls, twenty-four ounce to pint; flint, four pailfuls, thirty-one ounce to pint.

4. Clay slip, fifty-four pints; china clay, eighteen pints; flint clay, sixteen pints.

In the manufacture of *delft ware*, a certain proportion of brick clay is mixed with the others, because the addition of oxide of iron among its components, by promoting the incipient vitrescence of the ware, more than compensates for the tint it communicates. Macquer gives these proportions: slate clay, fifty; blue clay, thirty; brick clay, twenty.

The appellation *delft ware*, is usually applied to the kind which manufacturers call *cream colour*, and, from royal patronage, was named *queen's ware*. Since its first introduction, however, it has undergone very great changes; and a particular method of ornamenting it, has caused the adaptation of the body to the ornament, in *blue printed ware*.

The components of *queen's ware*, or *cream colour*, are the following :—

No.	1	2	3	4	5	6	7	8	9	10
Blue Clay....	36	30	25	25	28	25	56	27	27	36
Black Clay ..	18	26	22	23	28	24	..	33	..	24
Brown Clay	18	24	18	16	28	15	..	..	27	16
China Clay..	..	..	16	16	..	15	20	70	..	..
Flint.....	28	20	16	16	16	16	20	33	44	24
Cornish Stone	..	..	3	4	..	5	4	..	2	..

And, of the *blue printed* the following :—

No.	1	2	3	4	5	6	7	8	9	10	11
Blue Clay ...	30	30	30	30	30	28	13	32	30	30	25
Black Clay..	20	30	10	..	18	6	..	16	12	10	15
Brown Clay	15	..	..	12	..	..	20	..	12	10	10
Cracking Clay	..	..	10	10	12	10	6	16	..	10	10
China Clay..	15	16	26	20	20	20	27	16	20	20	24
Flint.....	20	25	24	23	20	22	30	20	20	20	16
Cornish Stone	..	..	..	5	..	4	4	..	6	..	..

The *chalky body* ware has these components :—

No.	1	2	3	4	5	6	7	8	9	10
Blue Clay.....	24	24	29	27	29	26	..	55	36	27
					Cr	Br			Br	Br
China Clay...	24	24	29	27	28	20	..	14	20	20
						Bl			Bl	Bl
Cambria Clay	..	..	..	..	..	24	60	17	20	14
Cornish Stone	2	..	..	2	..	..	..	3	..	..
Cambria Stone	..	..	..	..	..	..	20	..	..	..
Flint.....	50	52	42	44	36	26	20	11	24	30
Lime.....	..	..	..	..	7	4	..	..	..	..

Mr Lakin's recipe is, blue clay, twenty-six; ground flint glass, twenty-six; flint, six; Lynn sand, twenty-six; bone earth, eight; composition, eight.

The *Lynn sand*, by its very fine grain, supersedes the expense of calcining and grinding flints; and yet some of the manufacturers calcine it previous to its employment. The *lime*, by promoting the vitrescence of the mass, renders the ware very compact, yet less refractory in high heats; and hence these chalky bodies were formerly in much request, because less liable to craze. This certainly might be expected, as it is well known that lime renders glass less liable to break from sudden rise of temperature. The *Cambria rock* and *clay*, have not yet been so extensively employed as their excellence might have led us to expect, and only because of the disregard of chemical science by the parties who first used them. When this auxiliary is allowed its proper share in the conducting of the processes, the Cambria clay will be found one of the most valuable components of British earthenware; yet obtainable at very moderate expense.

When proper attention is paid to the proportions of the several components, seldom does any failure occur, and then only in consequence of some intermixture with them, of which the manufacturer was not aware. For instance, a quantity of flint was supplied, which had been ground with a chert that contained an extra quantity of carbonate of lime, and as this was not neutralized by an extra allowance of alumine, the regular heat of the biscuit baking fused most of the ware. Mr Good, Burslem, had ware and saggers fused together, and the fireman was so astonished, that he ran away!

The greater the quantity of flint which can be used, the whiter is the ware, yet it must be duly proportioned, else the second baking will cause it to crack; and, although the weights are determined for the slip makers, an endless variety of mishaps result from their blunders of *over* and *under flinting*.

The majority of manufacturers are not yet convinced of the bad policy of indulging the caprice of dealers, who, having paid according to a certain scale of prices, will not rise up to that which will allow a fair profit on a superior kind of ware. Hence, cheapness of production is too much regarded, and the excellence of the ware injudiciously sacrificed to economy, in the use of certain components which cost less of themselves, and need less baking; though it scarcely bears the usage of the warehouseman and packers; —acids and hot water affect the glaze, crazing ensues, and the article is deteriorated, and ultimately discarded. Now, this is no trifling affair, for the worthlessness of any kind of ware, has depreciatory effect, by the stigma on all from that district; and, in the censures it causes, all manufacturers are implicated; it injures them, locally, by suggesting the idea of superiority in the manufactures of other potteries; and it is most prejudical to them, nationally, by the unfavourable comparison when placed in competition with the continent of Europe and China.

Processes and Manipulations in the Clay.—In preparing what is called the *body*, or by the workmen, the *clay*, attention is indispensable on the part of the manufacturer, that his slip-maker most carefully forms his several components into liquids with water, till the proper density, or weight per ale pint, is formed by adding material or water as requisite, as ignorance or carelessness on this point, is often the cause of serious loss. The first method of *combining clays*, was by placing them *stratum over stratum*, then exposing them to the action of the atmosphere, and by repeated working with the spade, intermixing them, until they were much disintegrated. After they were continued exposed some months, portions were taken and mixed in water in a square hole, bricked on the sides, with a strong wooden ridge-piece on one edge. This is called the *blunging pan*; and a *blunger* is used, formed from a stout ash

plank, sawed blade-wise, the upper end having a cross-handle firmly fixed, and the blade diminishing from about eight inches by two, to six by one. This is forcibly shoved along the bottom, then rested on the upper ridge, and by pressing down the handle, the whole mass is agitated in the water, and so loosened that the pyrites subside. The watery mixture is poured through a hair sieve, upon a *sun pan*, or *sun kiln*, several feet square, a foot deep, and the bottom sprinkled with sand. The fluid is poured on at successive times, and evaporates a little; afterwards it is cut out with a spade, and laid in a damp vault until used.

Slip-making, is the process of preparing the clay for the present manufacture of china and earthenware. The slip-house is a long apartment, containing vats or arks for the flint, stone, and other minerals; and a slip-kiln formed of a long trough, eighteen to thirty feet long, three to five broad, and sixteen inches deep, in which large bricks, eighteen inches long, eight broad, and two to three and a half thick, (as nearer or not to the fire place,) are placed on bricks forming distinct flues beneath; and, for particular bodies, over all is run a coating, two inches thick, of plaster of Paris. The blunging pan is formed of flags placed edge-wise, and the blunger is about seven to nine feet long, shaped as already described. The native clays are mixed in water by the blunger, till the fluid is of a certain density, per ale pint, and resembles thick cream, and then by bowkfuls is poured through a lawn sieve, into a large vat, (often carefully graduated,) until all the clay is brought into a state of proper comminution, and the mass of a definite weight per ale pint. To this is added the requisite quantity of ground flint in water, also of a certain density per ale pint; and that a complete intermixture of the whole may be effected, the fluid is pumped out of this vat, upon the slip-kiln, in its course passing through the finest lawn of the series used. By the heat from the flues the whole mass is kept in continued ebullition, until a considerable proportion of the water employed as the medium of the components is evaporated, and the cessation of air bubbles on the surface, and from the solidity of portions cut out of different parts of the mass on the kiln, the slip-maker considers it sufficiently dry, but not too dry, for properly yielding to the hand of the thrower, or the manipulations of the presser, in giving it the forms of the several articles. It is removed from the kiln into an adjoining apartment, and the process of *Slapping the clay* succeeds. A strong man, with a spade, not unlike a T inverted, from a heap cuts off a small lump, and with much force casts it on another heap, to cool it by the exposure to the atmosphere, and temper it by destroying all air bubbles caused by evaporation on the slip-kiln. It is then carried into a vault until required by the workmen. Often, however, from want of capital, and of convenience, warm clay is taken by the workmen, after being only a few hours off the kiln, to the injury of the workmen as well as of the masters; the latter, though aware of this disadvantage, not resolutely opposing its occasional practice.

Throwing the ware is the first manipulation. Fitted into one nook or corner of the room, is a box, with a curved front, about four feet square. The *thrower's* (*engine or*) *wheel* consists of a spindle or axis, which turns vertically in a step, and is supported by a collar. On the upper end is firmly fixed the head, a circular disc of wood, which, during the operation, has horizontal motion. On the spindle, near the bottom, is a pulley, with grooves of varied diameters, for easing or increasing the force required for different vessels. In this pulley works a cord, which passes under a snatch-pulley guide to a wheel, three or four yards distant, placed near the wall, and from four to seven feet in diameter, moved by a wince.

In some manufactories, where steam-engine power is available, cones inverted are placed on parallel shafts, and a belt is adapted to them, which always is adjusted because of their similar but opposed dimensions. One of these shafts has a pulley on its lower end, from which passes a belt to the thrower's wheel; and the other is connected by proper gearing, with the moving power. The needed velocity for the thrower is obtained by the movable belt being higher or lower on the driving cone, from a directing lever.

At a strong bench or table, near the throwing wheel, is a *baller*, (usually a young woman,) with a large lump of the clay before her. This manipulation of *balling* is performed thus:—with a brass wire a piece of clay is cut off the lump, and with all possible force by the person slapped down again on the mass; this laborious work she repeats, by cutting in different directions, until the intersected part presents a smooth homogeneous surface, without any appearances of air bubbles; because, were one of these left therein, its expansion, during baking, would spoil the article. She then cuts off a small lump, with thin brass wire, and *weighs* it, when the body is valuable and the vessels must be of a definite size; next she squeezes it well together, and forms it into a ball, which she hands to the thrower as he requires a supply. The *thrower* sits on a low seat in the corner of the box frame, with his feet on the sides of the disc or wheel head, and his arms resting on his knees, keeping steady his hands while they modify the clay into any required form. On the side of the frame he fixes in a lump of clay a peg, or stick, at that distance from the centre which indicates the height and expansion of the vessels he must throw. Taking a ball of clay, on the wheel being in motion, he casts it very forcibly on the disc or head, and to expel any air bubbles, forms it into a conical pillar twice or thrice; then inserting his hand, or finger and thumb, with the other hand on the outside, he gives it the rude figure of the vessel; and, with a *wage* or pattern (formed of earthenware, and well glazed) he smoothly finishes the inside, and then, with a brass wire, cuts it loose from the head. The baller then hands him another ball, and dexterously lifts the vessel off the disc, and places it on a board, on which it remains (occasionally turned upside down,) until it is sufficiently dry to bear, without injury, the manipulations of *turning* and *handling*.

Turning the ware.—The *turner's lathe* resembles that employed by mechanics, only the spindle is longer, and some of them have a collar, movable by a catch, for the particular manipulation called *engine turning*. On the end of the spindle, outside the head-stock, is a screw, for the several chucks required by vessels of different sizes. A pulley with three grooves of varied sizes is also on the spindle, on which is the cord passed round the wheel, which is fixed on a crank shaft. Connected with this crank is a treadle; and beside the frame which holds the spindle, stands the *treader*, usually a young woman, who, by a motion of one foot, keeps up the velocity required, and can perform some manipulations requisite, without the attention of the turner being distracted from the vessel before him. Near the treader is a board, on which are vessels to be turned, which she severally hands to the turner as he requires a supply. Standing in front of his chuck, he fixes his vessel on it by a slight pressure with his tool, as the spindle has retrograde motion; then the proper motion being communicated, with a tool of soft iron, properly sharpened by filing, he takes off the superfluous quantity, and then the treader catches hold of the cord, and gives the spindle retrograde motion, during which the turner lays a broad tool on the vessel, and gives a certain polish to the outside; after which he applies a sharp tool to cut it loose, and then he places it on the board before him, for the handler if requisite, or to dry for being baked biscuit.

Mocha, tortoiseshell, and dipped wares.—These are the common drinking cups, bowls, and jugs, which have parts of the outer surface brown, green, or yellow, with ornamental rings around them, formed by the *turner* in the following manner:—having rendered smooth and in shape the outside of the vessel, he immerses it in a proper mixture, or applies the fluid by a sponge, and places it to dry as he proceeds with others. Afterwards it is fitted on the chuck, and the parts which are to appear white under glaze, are *tooled* out; while others of various colours are formed by a mixture applied through a quill, from a globular vessel, into which air is blown to force the fluid out. With a sponge, there is colour applied to form one kind; and on others, a drop is let fall, of a saturated infusion of tobacco in stale urine and turpentine, and it ramifies into the resemblance of trees, shrubs, &c.

The following are the components of *Dips* and *Smears*:—

1. *Brown*, for jug necks,—Take and mix well twenty parts, severally, of blue clay, yellow brick clay, Bradwell-wood clay, calcined ochre, and oxide of nickel, grind, and pass through a 12's lawn.

2. Calcine iron scales (from the smithy,) pick, pulverize, and pass through a sieve, hair, or coarse lawn; and mix one pound in one quart of earthenware slip (No. 4.).

3. Mix two ounces of fine zaffres in a quart of yellow brick clay slips.

Slate Dip.—Make earthenware turnings into a thick slip, cream like, with water; then to seventy-eight parts of the slip, add twenty two of fine zaffres.

Green.—In two quarts of unflinted earthenware slip, mix one pound of ground zaffres; evaporate, calcine, pulverize, and sift; then, in a quart of flinted slip, mix twelve ounces of the calx.

Dark Green.—In one quart of stone-ware slip, mix three ounces of zaffres.

Olive Green.—Mix black marl into slip, twenty-four ounces to ale pint; into three pints of slip mix four ounces of zaffres.

Olive Sponge Dip.—Mix one ounce of zaffre into a quart of yellow brick clay slip.

Blue.—1. Mix half an ounce of pure cobalt calx into three pints of stoneware slip.

2. Ball clay, twenty-eight; Cornish stone, fifty: plaster, twenty; blue calx, 2

3. Ball clay, twenty-three; Cornish stone, twenty-seven; flint, twenty-seven; china clay, fifteen.

Grey.—1. Best slip, seventy-five; flint, fifteen; emery, sixteen; manganese, four.

2. Best turnings, ninety-four; saffre, six; in rain water only.

Orange.—Brown dip, fifty; black marl slip, fifty.

Cane.—Orange dip, fifty; best slip, fifty.

Red.—Brick clay slip, sixty; Bradwell wood slip, forty.

By the manipulation of the *jigger*, great numbers of small articles are quickly formed, also plates of various sizes. A spindle is fixed in a step, and its disc is above the table or bench; while, from a pulley below, a belt passes to another

spindle, on the upper end of which is fixed a small wince, which is turned by a lad, while another forms his clay articles.

Modelling.—This manipulation demands judgment and taste, as well as delicacy of execution. The *modeller* forms a correct model of the object, whether utensil or figure, and, when this is dry, one or several blocks are formed from it; and these are used by the *mould-makers*, to cast *moods*. With a thick layer of clay around the block, space is left, into which is poured plaster of Paris, and left some time for the water to evaporate, and the plaster to solidify for the required manipulations.

Pressing or squeezing the ware.—The *presser* keeps all his moulds on shelves ranged in a room around a heated stove, which, by raising their temperature, promotes their absorbence of the moisture in the clay in contact. For convenience he has a number of moods for each kind of vessel or utensil. He regards the size and strength of each, and then cuts off a lump of clay sufficient for the purpose; and, after squeezing it in his hands, he beats it to a suitable size and thickness. Usually ten or more of these *bats* are prepared before proceeding to the next operation. Taking the several parts of his mood, he covers it with a proper portion of the bat, and bosses it on with a damp sponge, afterwards with his thumbs, forcing it into all the parts, however angular they may be. With a moistened spouge he carefully smooths the inner surface, then trims off all extra portions from the edges, which he moistens with *slip* (unevaporated body), places all parts of the mood in proper contact, when needful, secures them by a belt buckled round, and then ranges the whole on the shelf around the stove, till sufficient moisture is absorbed to render the article capable of bearing, without injury, other operations. In small moods are formed ornamental figures, snips of jugs, spouts, handles, and various utensils. When the series of moods is filled, the presser empties them, again fills them, and while they are drying, with proper tools he takes off all appearances of seams, trims up the articles, and applies whatever appendages are connected with his department.

Handling the Ware.—This is a distinct branch of the *clay-man's* manipulations, and regards fixing on vessels the handles, spouts, snips, and ornamental figures proper for them. Many of these are formed in moods, as by the presser; the handler having a number in his charge, ranged around the stove for use. But for common vessels, a *box and screw* is used to supply lengths of clay of a certain form, as required. An iron cylinder is secured to a block fixed in the wall. Into this cylinder, at the bottom, is placed a piece of lead, perforated agreeably to the intended shape of the clay-length; and for tubes, it has a steel round pin firmly placed in the centre of the lead; a piston of iron is adapted to the cylinder at the end of a powerful screw, which works through a bar above, by a cross handle. Into this cylinder is put a lump of clay, and the force of the screw on the piston causes the clay to pass through the lead-piece, and it is received on a board, until all is pressed through; and these lengths are left a short time to dry. The handler then cuts them in sizes, places them in a proper curve, and prepares his vessels by trimming them. Having his handles, snips, and spouts before him, with a sharp knife he cuts their edges level, also the cylindrical side of the vessel, then cuts out the place for the snip, or the aperture for the spout; next moistens all the edges with slip, fixes them properly, leaves them a few minutes, examines and corrects any defects, and after some time trims them, and lets them remain until ready for being baked biscuit.

Making of the Ware-biscuit.—The potters' oven for biscuit is usually larger than that for glaze; and is, in form, a cylinder ten or twelve feet high, and from ten to fifteen feet in diameter, surmounted by a dome from three to five feet in height, in whose centre is an aperture about two feet in diameter. The firebricks used are made of the shale marl, carefully mixed with slate clay; and the exercise of judgment in this mixture is well compensated by the demand for more serviceable bricks. In erecting the oven, the builder lays the bricks, not in lime and sand mortar, but in a mixture of fire clay and sharp sand with water, or China clay and a weak solution of borax in water; making the joints so close and compact with this lute, that the first baking of ware therein causes the whole interior to become one compact shell of vitrefied fire clay, precluding any admission of air into the interior, except through the mouths; which, and also the bags or flues, are carefully adapted in size, so as to prevent a continual current of atmospheric air carrying off through the dome a portion of the heat which ought to be appropriated by the ware in the oven. The *mouths* on the outside are from four to ten, according to the size, and communicate with *flues* in the hearth of the oven, and *bags* of bricks, placed edgewise, leaving an aperture of a few inches, fixed to the inside of the cylinder; between each of which, in the cylinder, is left a small hole, from which the fireman, by means of a long iron rod, can draw his trials out of a sagger placed opposite, or through which he can inspect the gradual rising of the temperature of the oven, and its remaining at a certain heat during the time required for earthenware, till the "heat will expel the moisture and agglutinate," as stated by Vauquelin, "the components, without effecting the fusion, which would render the ware so homogeneous as to become brittle." But, for the best or hard china ware, the temperature is raised till there is a semi-vitrescence of the components, calculated to be 80° to 100° Wedgewood, as the earthenware is 45° to 65° W., and that for the glaze 10° or 7·5° lower. Felspar ware 115° W. Dr W. Henry assigns others to different china wares:—Worcester, probably Flight and Barrs', 94°, Chelsea 105°, and Derby 112° Wedgewood.—Here let it be understood, that the *Wedgewood Pyrometer* is no longer to be obtained, and the real cause has not been assigned. This pyrometer was invented by Thomas Massey, (a bailiff, in Mr Wedgewood's manufactory,) to determine the respective temperatures of the biscuit and glaze ovens, and of the enameller's muffles; but he most resolutely declined communicating to Mr Wedgewood the components of his *dods*, (or trial prisms), and was prevented informing his brothers, Richard and William—the real secret died with him. Mr Wedgewood *guessed* at a clay for the purpose, and supplied philosophers therewith, till its inaccuracy was exposed by Guyton Morveau. Chemical reaction had completely affected what useful properties for the purpose previously existed. When the ware is so dry as to appear of an ash-grey colour, the several articles are placed within each other carefully, in *saggers* (probably from the Hebrew *sagar*, to burn, and hence applied to a rolled leaf of tobacco used for being *burned*, while the smoke is inhaled,); the shape is usually that of a lady's band-box, though for plates round ones are used, and some have triangular holes inside in three double rows, for inserting stilts to keep the flat pieces separate. They are formed of shale clay, (can marl,) sixty-seven; slate clay, (black marl,) thirty-three, well beaten together; or of ground biscuit earthenware, sifted, and mixed with black marl; then formed into bats one inch thick, and placed around a drum of the shape and size required, mostly twenty inches long, and oval in shape, and a bottom bat is fastened by working the edges together. To prevent the articles adhering from accidental excess of heat, pulverized grit-stone is introduced between the ware and the sagger bottom; and the best china, jasper, pearl, &c., are imbedded in ground flint, as a matrix, to prevent *wauving* (waving or altering the shape and figure,) which might possibly ensue from high baking. The saggers are filled as full as they will contain, and then are piled on each other in vertical *bungs*, each edge of a sagger being coated with a thick *wad* of coarse brick clay or marl, and on which the next upper sagger is imbedded; and the whole pile resembles one compact mass, secure from any deleterious effects of the carburetted hydrogen, or sulphureous vapours evolved by the fuel. In different parts of the oven are pipe-saggers, to promote the regularity of the baking; and opposite the aperture, between the bags, is a sagger with its side perforated, and containing the *trial pieces*. When the oven is filled, and all arranged, the door-way is built up with bricks, and plastered over with mud, and short iron bars are hooked into an iron frame that goes along the edge of the doorway, and is connected with two or three ranges of very strong hooking-pieces of iron, that go round, like hoops, one at the commencement of the dome, and two others on the cylinder, and which guards are necessary to prevent the high temperature of the whole causing the cylinder to crack or hilge out. After the first eight hours, the baking continues of a regular heat for about thirty-five hours more, and then is rapidly urged on for three hours longer. An experienced fireman will judge with tolerable accuracy of the process of baking, by the appearance of the saggers, and by inspection of *trial pieces* made of brick clay, in the shape of rings and small gallipots, taken from different parts of the oven, and which present a varied tint at different degrees of temperature, compared with a trial known to have been properly baked, and kept as a standard for determining the process. When the fireman knows the nature of the coals he uses, he will frequently save to his employer, (in addition to the production of superior ware,) the consumption of coals exceeding the amount of his wages. When the baking is completed, the *mouths are drawn* (the fuel is extracted) as quickly as possible; the whole is left to cool for several hours, (the entrance is opened,) *the clammings* are taken down, the saggers are emptied as quickly as possible into baskets, and carried into the sorting room, where they are carefully examined, and by *sound* tried whether fit for further processes, and when so, placed in the biscuit warehouse; as *good*, when perfect; as *seconds*, when slightly injured, yet sound; and, as *lump*, or *thirds*, when defective, yet sound in structure. All *cracked* articles are cast aside on the *shord-rack* (heap of *pot-sherds*). The expansion and contraction of the mass expediting the destruction of the oven, manufacturers strive to keep their clay stock up, so as constantly to supply ware, without allowing the oven to be lower than is absolutely proper for the men to bear while drawing, and again setting-in. The earthenware, in its biscuit state, has a dry and gritty roughness; the china, a resemblance to statuary marble, devoid of any lustre on its surface; but, when of a good body, and excel-

lent workmanship, as vases, busts, figures, and models, all the edges and tooling remain as sharp and clear as in fine sculpture. There is great probability that a sight of the biscuit china, suggested to Mr G. Cumberland, of Bristol, the idea of manufacturing *tiles* of a body of clay and ground silica; by pressing linen of different fineness upon the clay, for the formation of the teetb, and then baking them till vitrified. (Vide Nicholson's Journal, 8vo. vol. xxv. p. 257.) Slight inspection of biscuit ware will suggest, and its bibulous nature on immersion in water will demonstrate, its porosity, rendering it inconvenient for containing fluids, and easily destructible by decomposition; yet properly adapted to retain the fluid medium of the components of the *glaze*, which bas been employed from earliest times to assist the durability, and improve the general appearance. The thin fabric of most vessels, as well as the components of the body, will not allow the fluid glaze to be applied while they are in the clay state, as the water would cause the shape to alter, and either sink beneath its own weight, or bilge out and burst. English china, as at present compounded, if attempted to be formed by once baking, would so contract in the body as not to appropriate all the glaze which would be in ridges on the surface. And this will apply to any china whose components of the body greatly differ from those of the glaze. When the most ready employment of felspar in body and glaze becomes generally known, then will English china, probably, be made at one baking.

Ornamenting biscuit ware is accomplished by *painting* and *printing*, with the distinction of *blue*, because that colour was first employed; though now, in both branches, most other colours are used.

Blue painting, or *biscuit painting*, is now practised on only very common earthenware; and in rude patterns, traced by camel-hair pencils, on the surface of tea-ware and jugs. The colours for this manipulation are thus prepared:—

Brown.—(Fritt).

No.	1	2	3	4	5
Litharge.....	48	30	60	42	22
Antimony, Crude,..	18	14	30	..	..
Manganese,.....	12	14	10	17	20
Glass of Antimony	18	..	..	41	50
					nitre
Zaffres, ...	4	42	..	..	8

Blue calx, 9 or 8; fritt, 91 or 92.

Red Brown.		*Purple Brown.*		*Purple Brown.*	
Manganese,.....	62	Manganese	45	Peroxide of Iron	15
White Lead	12	Red Lead	50	Flux*.....	85
Glass	7	Blue Calx	5		
Flint	12				
Borax.....	7				

Yellow Calx.			*Orange.*	*Nasturtium.*		
Litharge, ...	17	48	46	Chromate of Lead		24
Crude Antimony	17	36	30	* Flux.	Glass,.....10 White lead, 3	33
			Crocus			
Lead Ashes....	33	..	16	† Flux.	Glass,..... 3 Red lead,.. 2	33
Tin Ashes.....	33	16	8			

Naples Yellow.		*Greens.*	*Yellow.*	*Blue.*
White Lead.....	75	Yellow Calx..	60	10	5
Oxide of Antimony.....	14	White Enamel	20	11	11
Mur. of Ammonia	7	Red Lead	13	40	42
Sulp. Potass and Alumine,	4	Flint	—	14	14
		Copper Calx..	—	4	7
		Blue Calx	7	..	..
		Borax.....	—	9	9
		Glass	—	12	12

For enamel use 12 flint, and 6 copper.

Blue for Edging.					*Brown for Edging.*				
No.	1	2	3	4	No.	1	2	3	4
Flint	13	30	5	..	Brown (fritt 14)	60	37	70	65
Glass.....	20	20	30	32	Orange (fritt.)	6	4	11	10
White Lead	10	..	30	40	Glass.....	30	32	4	8
Fritt†.....	37	10	10	..	White Lead....	4	27	..	5
Blue Calx ..	20	40	25	28	Flux †	..	..	15	12

Blue printing is the name for the manipulations of taking impressions (in colours, blue, green, pink, and brown,) from copper-plates engraved in a style peculiar to the artists of the pottery districts; and of sizes varied to the different vessels. The press is made very strong and large, similar to that used for beautiful copper-plate printing for embellishments; usually with cast-iron cheeks and rollers, and an iron lever, not a cross. The press is placed within four feet of a stove-plate, kept constantly heated, that when the copper-plate is laid thereon, its engravings may more easily admit the colour as it is rubbed over it. The printer has his thumb and finger protected by a thick slip of leather, and cleans his plate from the scalding colour with a stuffed leather boss, not his hand, as other copper-plate printers.

The *blue* colour is blue calx, 37; flint, 42; nitre, 6; borax, 15; well ground together; (and in similar proportions for other colours;) the tint being heightened or lowered by the quantity of the calx.

Brown.—Litharge, 37; crude antimony, 37; manganese, 18; and blue calx, 8; calcine and grind well together for use.

Black.—Red lead, 60; antimony, 25; manganese, 15; calcine, then grind with blue calx, 40; oxide of tin, 5; and calcine for use.

Mulberry.—Manganese, 54; blue calx, 26; nitre, 14; borax, 6; calcine over pulverized nitre; then grind well with glass, 18; flint, 10; for use.

The colour is well mixed on a very hot iron plate, into a fluid, called technically an *oil*, prepared thus: over a slow fire, in a vessel kept loosely covered, for two hours boil one quart of pure linseed oil, then add one pint of pure rape oil, and two ounces of capivi balsam, and boil two hours longer. When a little cooled, (to 160°) add, of amber oil, white lead, and clean pitch, severally half an ounce; resume the boiling, and continue forty-five to seventy-five minutes, according to the strength of tint for which it is wanted. Some printers prefer to the latter ingredients, one ounce of oil of tar, and one onnce of balsam of sulphur, very carefully introduced, else the whole will be spoiled by coagulation.

The printer places his plate on the stove, rubs in the colour, with a broad pallet knife scrapes off the excess, and then with his boss cleans the plain sides, and places it on the bed of his press; he next brushes the sheet of tissne paper over with a solution of soft soap and water, puts it on the plate, rolls it between the rollers, and the instant the return of the press leaves it dry by the hot plate, he carefully takes it off, and examines tbat the impression is a good one, and that the colour properly adheres. Thus he proceeds till his quantity is taken off. Messrs. Machin & Potts, Burslem, under the security of a patent, use *engraved rollers* for the purpose, instead of plates Their machinery is, at present, not exhibited to strangers; but the suggestion seems taken from calico-printing, with which branch Mr Potts was some years connected.

A *cutter* (a little girl, training up for the next manipulation,) takes the impression, cuts away all the white paper, then separates the impression into its parts, which she places in the order most readily facilitating their application to the ware.

A *transferer*, with considerable tact and judgment, places on a biscuit vessel the several parts in their proper arrangement; and then, with a rubber of flannel, six to sixteen inches long, and firmly rolled and tied together, with the ends a little loose, she rubs the paper upon the article, with much force, often resting one end in the right arm-pit, until it cannot again be taken off. The dry and absorbent porosity of the ware aids the adhesion of the colour in the oil, and when the task is completed, each vessel is taken off the board on which it was placed by the transferer, immersed in water, and with soft soap and a brush the paper is washed off, and leaves in the ware only the mineral colour, and a little of the oily medium. The ware is kept in a heated room to evaporate much of the water imbibed in washing off the paper, which is requisite to prepare it for the fluid glaze; and also, is heated to a red heat, to *harden on* the colour, and volatilize the oily particles, else the glaze would not adhere.

Baking china and earthenware, glazed.—The porous nature of vessels baked only biscuit, would allow many fluids to permeate, which being an inconvenience, while it facilitates their destruction by decomposition, the necessity of an impermeable covering, is provided for in a glaze; and this has been attempted to be effected by several different processes.

When common pottery was manufactured in Staffordshire, the dust of lead ore was shaken from a bag, on the outside, in the clay state, and afterwards manganese was mixed with it. Glazing with salt was the next improvement, and then washing; and, finally, biscuit-dipping. For some years, only *raw glazes* were used; their components only being mixed, without fritting, prior to grinding; but, as the desire for improvement increased, the method adopted to make glass and vitreous colours, suggested the practice of *fritting* the components. There is a physical necessity for the components of the glaze to be adapted to those of the body, which is varied according to the judgment or opinion of the manufacturer. The degree of expansion and contraction depends on the density and compactness of the body, which must be carefully regarded, or

the glaze which appears fine on one body, will seem defective, and craze on another; the temperature requisite for fusion of its components, may be lower than will bring the surface of the ware into a suitable state for combining therewith, and consequently, they would intumesce, be devoid of lustre, craze, and scale off; or, it might be higher than the body will sustain, which being too much contracted, the glaze might lie in streaks; or, it might wauve, and being rendered, by the alkaline components, more fusible, at a higher temperature than biscuit baking, the whole might sink into one vitrified mass, as too often occurs.

The *china glazes* have these *raw* components:—

No.	1	2	3	4	5	6	7	8
Cornish Stone....	25	35	32	20	15	40	30	25
Red Lead.....	30	30	40	23	44	18	20	45
Borax.....	18	3	..	19	6	..	8	..
Flint	12	14	7	16	15	12	14	14
Glass	10	17	20	12	18	30	22	12
Soda	3½	..	..	6	..	..	3	..
Tin Oxide.....	..	..	..	3	..	..	1	2
Blue Calx.....	1½	1	1	1	2	..	2	2

These are substitutes for *felspar*, as *raw* glazes:—

No.	1	2	3	4	5	6	7
Cornish Stone....	40	28	50	29	30	42	40
Glass	..	24	..	29	30	..	27
Flint	28	16	..	..	..	..	11
Borax	22	..	..	..	..	..	11
Potass	..	14	12½	21	10	20	..
Nitre	..	2	..	..	..	..	11
Soda	20	..	..	..	..	..	..
Red Lead.....	..	16	..	..	..	..	..
Lime	..	..	37½	7	30	38	..
Lynn Sand	..	..	..	14	..	..	..

When borax is very expensive, this is often substituted: subject equal weights of nitre and flowers of sulphur to heat, till all sulphurous acid gas is dissipated; then pour on an iron plate, and, when cold, take off the greasy scum, and use the remainder.

These are the *fritted glazes*, in proper succession:—

1. *Fritt.*—Flint, 54; lead, 17; glass, 17; nitre, 9; borax, 3.—*Glaze.* Fritt, 50; lead, 20; glass, 22; flint, 8.

2. *Fritt.*—Cornish stone, 36; glass, 28; flint, 25; borax, 11.—*Glazes.* Fritt, 80, 60, 84, 72, 76, 78; lead, 20, 40, 16, 28, 24, 22.

3. *Fritt.*—Cornish stone, 22; glass, 20; flint, 18; borax, 6; potass, 18; salt, 12; nitre, 2; china clay, 2.—*Glaze.* Fritt, 80; white lead, 20.

4. *Fritt.*—Cornish stone, 21; glass, 21; flint, 21; borax, 5; potass, 16; salt, 12; nitre, 2; china clay, 2.—*Glaze.* Fritt, 80; white lead, 20.

5. *Fritts.*—Glass, 76; red lead, 7; potass, 7; arsenic, 4½; nitre, 5½; glass, 47; potass, 53. Grind together.—*Glaze.* Fritt, 80; lead, 20.

6. *Fritt.*—Cornish stone, 82; flint, 9; nitre, 9. Grind well together.—Fritt, 50; glass, 30; flint, 20.—*Glaze.* Fritt mass, 50; lead, 45; flint, 3½; potass, 1½.

7. *Fritt.*—Cornish stone, 44; glass, 30; flint, 18; borax, 4; nitre, 4.—*Glazes.* Fritt, 44; cream coloured glaze, No. 2, 56; fritt, 60; white lead, 40; fritt, 78; white lead, 22.

8. *Fritt.*—Cornish stone, 31; glass, 38; borax, 31.—*Glaze.* Fritt, 80; lead, 20.

9. *Fritt.*—Glass, 75; red lead, 15; arsenic, 4½; nitre, 4½; black calx, 1.—*Glaze.* Fritt, 28; cornish stone, 20; glass, 22; white lead, 30.

10. *Fritt.*—Cornish stone, 80; soda, 20.—*Glaze.* Fritt, 40; Cornish stone, 20; flint, 15; white lead, 25.

11. *Fritt.*—Glass, 84; flint, 10; red lead, 4; arsenic, 1; nitre, 1.—*Glaze.* Fritt, 25; Cornish stone, 30; lead, 25; flint 16; borax calxed, 4.

12. *Fritts.*—Glass, 72; red lead, 22; arsenic, 3; nitre, 3; glass, 97; blue calx, 3; grind together.—*Glaze.* Fritt mass, 20; Cornish stone, 25; flint, 10; white lead, 45.

13. *Fritts.*—Glass, 48; Cornish stone, 24; red lead, 20; flint, 5; nitre, 1½; arsenic, 1½.

Glass, 73; Cornish stone, 12; red lead, 9; black calx, 2; nitre, 4.—*Glaze.* Glass, 26; Cornish stone, 30; fritt, 36; white lead, 5; potass, 3.

These are the *fritted* Felspar glazes:

1. *Fritts.*—1. Lynn sand, 54; soda, 46.
2. Flint, 64; soda, 36: and,
3. Lynn sand, 70; soda, 18; China clay, 22.

Glaze. Fritt mass, 10; borax, 30; Felspar, 60.

2. *Fritt.* Felspar, 90; carb barytes, 7; carb. lime, 2; magnesian clay, or steatite, 1.

Glazes.—1. Fritt, 64; borax, 26; nitre, 5; potass, 5, for printing; and substitute 4 of salt for 4 of borax,
2. Fritt, 58; borax, 39; nitre, 3.
3. Fritt, 62; borax, 38.
4. Fritt, 60; borax, 36; nitre, 4.

3. *Fritt.*—Felspar, 52; borax, 34; nitre, 8; soda, 2.—*Glaze.* Fritt, 60; borax, 40.

4. *Fritt.*—Felspar, 50; borax, 24; Lynn sand, 8; China clay, 6; nitre, 6; potass, 6.—*Glaze.* Fritt, 62; borax, 32; nitre, 6.

Fritts.—Felspar, 40; China clay, 20; salt, 16; lime, 8; magnesia, 8; barytes, 8.

Flint, 50; soda, 25; potass, 25; grind together.

Glaze. Fritt, 60; borax, 32; nitre, 8.

The *raw* glazes for earthenware, have these components:—

No.	1	2	3	4	5	6	7	8	9
White Lead.....	48	25	50	56	50	..	..	60	58
Flint	14	20	14	15	11	15	..	18	..
Cornish stone....	23	30	25	30	26	27	39	22	42
Ground Glass	15	20	11	..	13	10	..	..	..
Litharge.....	..	Borax 5	..	..	..	48	61	..	..

The *fritted* glazes have the following components:—

1. *Fritt.*—Glass, 69; litharge, 18; nitre, 8; arsenic, 4; blue calx, 1.—*Glazes.*—For *printed.* White lead, 54; Cornish stone, 26; flint, 14; fritt, 6. Flow with rock salt, and pearl ashes.—For *enamel.* Litharge, 55; stone, 25; flint, 15; fritt, 5.

2. *Fritt.*—Glass, 70; litharge, 22; nitre, 4; arsenic, 4; blue calx, 1.—*Glazes.*—Printed. Fritt, 12; flint, 20; Cornish stone, 23; litharge, 45.—*Coloured.* Fritt. 18; flint, 10; Cornish stone, 25; white lead, 48.—*Mocha.* Fritt, 13; flint, 11; Cornish stone, 26; litharge, 50.—*Cream colour.* Fritt, 30; crown glass, 20; flint glass, 50.

3. *Fritts.*—Flint, 87; borax, 13:—also, glass, 84; red lead, 8; nitre, 3; salt, 5.—*Glaze,* for *enamel.* Fritt, 22; Cornish stone, 25; white lead, 28; blue calx, 1.

4. *Fritts.*—Red lead, 20; glass, 68; arsenic, 5; nitre, 5; blue calx, 2.—For *flatware.* Lead, 14; flint, 50; borax, 23; nitre, 12; blue calx, 1.—*Glaze.* Printed. Fritt, 80; white lead, 20.

5. *Fritts.*—1. Glass, 92; white lead, 7; blue calx, 1; also,
2. Glass, 68; red lead, 27: arsenic, 5; then grind
No. 1. 20, No. 2, 80, for printed teas or jugs; or
25, 75, for flatware.

—*Glaze.* Fritt mass, 16; Cornish stone, 27; flint, 10; white lead, 47.

6. *Fritt.*—Glass, 52; red lead, 18; arsenic, 12; nitre, 12; borax, 5; blue calx, 1.—*Glaze.* Fritt, 20; white lead, 50; stone, 24; flint, 6.

The *coloured glazes* have these components:—

Black.—1. *Shining.* Calcine flinted slip, 60; red lead, 40; mix calx, 80; good manganese, 14: grind together.

Or, 2. White lead, 66; manganese, 26; flint, 10; grind together.

Brown.—1. Raw glaze, manganese (No. 1), 33; fritt glaze (No. 3,) 67, for printing.

2. Raw glaze, manganese, (No. 1.) 67; fritt glaze, (No. 3,) 33; for jug necks.

3. In best slip, 33; flint, 5; red lead, 62.

Manganese, 2, will make this *black.*

Green Fritts.—1. White lead, 54; flint, 27; blue clay, 9; copper calx, 9; blue calx, 1: grind well.—*Glaze.* Fritt, 15; No. 2, raw glaze, 85.

Fritt. 2.—White lead, 33; copper calx, 28; glass, 17; flint, 22.

Glazes.—Fritt, 26, No. 4, fritt glaze, 74 for *desert* ware.
Or, do. 20, 80, for *printed.*
Or, do. 40, 60, for *edging.*

Yellow.—1. Yellow calx, 14; litharge, 14; fritt glaze, (3) 72.
do. 20, raw glaze, (2) 80.

The components of a glaze should be, by chemical affinity, adapted to fuse together, and flow equally, (not in streaks on one part, and without lustre on another,) readily combining with those of the body, without affecting the contraction of the vessel, during the baking; and when cold, present an opaque covering of cream colour; but for ornamental wares, china or earthen, the glaze must appear clear, free from specks, or bubbles, resemble velvet in softness to the eye, resist acids and alkalies, and bear sudden rise of temperature. They also must mix with water, to the denseness and resemblance of thick cream, but not thicker than be, on the water being imbibed by the ware, a thick coating, which when dry, will bear being placed in the saggers, without a portion rubbing off. The *fritt glaze* is ground to an impalpable powder; and then mixed with those components which are used raw, in the same manner as *raw glazes* are mixed,—by a hand-mill, not unlike a circular washing-machine, and then put into a dipping tub,

To prevent the more ponderable components *precipitating* and the deficiency leaving almost a mere wash for use, constant stirring is kept up; and there is a certain quantity of common salt, for raw glazes, (and of muriatic acid for fritt glazes,) mixed therewith, to preserve the density of the medium. The DIPPER receives from a boy each article, which he immerses, and by a peculiar movement of his hands causes all the surface to be, equally yet thinly

covered; he then places it on a board, on the points of nails, and the unappropriated fluid drains off, and when dry it is placed in saggers for *glaze baking*.

The dipped vessels, when moderately dry, are placed within saggers, and by *stilts, triangles, rings, pegs,* and *cockspurs,* kept asunder, to prevent their adhereuce when the glaze flows, and to allow all the materials of glaze and body to be properly annealed. The temperature is a white heat of all within the oven; and when the trials indicate complete vitrescence of the glaze, the fires are quickly drawn, and the whole is left to cool, ready for the warehouse.

Ornamenting of glazed ware.—This includes *black printing, lustering, and enamelling.*

Black printing is the term for applying impressions to glazed vessels, whether the colours be black, red, or gold. The copper-plates are engraved in a style differing from those employed in *blue* printing; and the colours are different in components and preparation.—The following are the components of the colours:—

Black.—1. Copper calx, 20; flux, (†) 80.
2. Copper calx 25; flux, (*) 75.
3. Calcined borax, 40; calcined umber, 35; blue calx, 9.
4. Do. do. 25; do. 75, for gilded ware.

The *green, purple,* and *pink,* are the enamel colours fluxed a little more, with flux. (†) Instead of using *paper* for taking off impressions, the black printer employs glue bats, prepared in this manner:—A definite quantity of good glue is soaked well some hours in water; it is next put into a large jug, and by the heat of boiling water evaporated during four hours; afterwards it is poured out on large well-glazed flat dishes, to the thickness of one-eighth of an inch, and left to cool. The glue is next cut into pieces, technically called *papers,* corresponding in size to the plates. The printer rubs his colour, in the state of an impalpable powder, well in a saucer, with a lock of carded cotton, well dried. He, with rosin, fixes his plate to a wood prism, as a handle, then rubs into the engraving his *oil,* (a mixture of cold-drawn linseed oil, and oil of turpentine, or Barbadoes tar,) and, with much pressure, the glue paper abstracts the oil out of the engraving, and being immediately laid carefully on the ware, previously wiped very clean, the oil, by a gentle pressure, adheres; he next with a sponge cleans the paper, and leaves it to dry, while he applies the powdered colour, by the cotton to the oiled design. With a series of papers he proceeds successively till his complement of ware is finished; and afterwards, commencing with the vessels first printed, with silk rags he cleans off all superfluous colour from the design, and wipes all the other parts clean from whatever might be likely to adhere to the glaze while being baked in the muffle.

Lustred ware.—The body is usually formed of common brick clay, 60, and blue clay and black marl, 20 each, blunged well, and properly lawned; fired biscuit, and then covered with the brown glaze, No. 3.

The components for the lustres are thus combined:—

Gold.—In nitro-muriatic acid, sufficient, dissolve,
Gold, 120; grain tin, 5: mix with (by heat)
Balsam of sulphur, 60; spirits of turpentine, 40.

Drop the acid solution in while stirring the medium; and when well mixed, use with best turpentine only. 1 ounce of gold makes 32 of lustre.

Persian gold lustre.—In fat oil on a tile, placed on a hot stove, mix dry oxide of gold, and when eliquation commences, stir with palette knife, and add more oil till 25 be used, and the colour resemble that of balsam of sulphur; then diminish the temperature, and gradually add turpentine, 75.

Silver, or *Steel Lustre.*—In muriatic acid, concentrated, dissolve platinum till the acid be saturated. Then at 112° Fahrenheit, to 25 of solution, add very carefully, and in small doses, 75 of spirits of tar. The chlorine will be evolved by the heat, and the chloride of platinum will remain in the tar. The metallic composition is applied to the ware by broad hair pencils; and this last, baked in a muffle, at enamelling heat, is *steel* lustre. Then in water mix the oxide of platinum, (obtained by sal ammoniac orecipitating it from the acid solution,) and cover the steel lustre; again bake, and it will be *silver lustre.* If the glaze be opaque, not brown, this latter will at once give *silver lustre.* The gold lustre is used with turpentine similarly; and, recently, a new kind has been in the market, of whose components we have not yet been able to obtain determinate knowledge.

The *Muffle* for baking ornamented glazed ware, is of a size in proportion to the quantity usually in demand; and is constructed so as to prevent any vapours entering from the fuel. Considerable judgment is requisite for properly placing the different articles in this kiln; but this is the general principle:—the lustres are least liable to injury by baking; the rose colour, purple, cornelian red, pomona green, and gilt for burnishing, have a central situation; around them are placed articles in colours less affected by fixing oxygen. A layer is placed, with props fixed in different parts; on these, bats of half an inch thickness and 20 to 30, by 12 to 16 surface, are laid all the length; and ware placed thereon: repeating this arrangement till the whole is filled, and then the aperture is closed and the baking commenced, and continued until the colours appear properly combined with the glaze; which the fireman ascertains by inserting a bit of deal stick in the kiln, and its white flame renders obvious all the colours on the ware. When this is completed, the fire is withdrawn, and the whole left to attain the temperature of the air. The contents are then taken out carefully, and the gilded articles taken into a proper room to be *burnished* with agate, and blood-stone, and then carried into the warehouse to be wrapped in tissue paper for the market. In every process herein detailed, confidence may be placed. Why persons communicate *false recipes,* I hesitate to assert; but certainly whatever be the satisfaction in supplying correct information, in equal proportion must there exist self condemnation for wilfully misleading those who are seeking information. Ignorance is not a sin. Where I have not understood the process, I have avowed its being unknown to me.

Enamelling of China and Earthenware.—This art of executing designs on the glazed surface of ware, with colours so vitrifiable as readily to acquire lustre at a moderate heat, or cherry-red heat, without complete fusion, has only been practised about eighty years in potteries. The colours, or enamels, are formed of a transparent and fusible glass, which has metallic oxides chemically combined to impart the necessary tint. The oxide of gold is used for purple and rose colours, also for a beautiful lustre; that of silver for yellow; cobalt for blue; copper for greens and blacks; antimony for yellow; umber for black and brown; platinum for steel and silver lustre; manganese for violet; chrome for cornelian red, and pomona green; and iron, in different states for red, brown, and black. A little more detail may not be improper in reference to some of the preparations.

The *Enamel Purple* is thus prepared:—In a large bowl of warm water, (112°) mix well a certain quantity of acid solution of nitro muriate of gold, and 1 twentieth part of acid solution of nitrate of silver; then carefully add the equivalent of muriate of tin, and continue stirring the fluid half an hour; then add boiling water, till quite insipid; leave the fluid twenty-four hours to rest, and then with a siphon draw off the water, without disturbing the precipitate. Into this water stir a saturated solution of muriate of ammonia, that any oxides left may be precipitated; or hydro-sulphuret of ammonia. For use, the precipitate is ground with 30 to 45 parts of flux; of red lead, 7; borax, 10; flint, 2.

The *Rose Colour.*—In water just below boiling, (190°) 99 parts, mix 10 parts of saturated solution of gold; then precipitate by plus of muriate of ammonia, of a yellow tint; let the precipitant be added at different times for twenty-four hours, and then rest twelve hours for all to go down, with a siphon draw off the water, as in purple; add boiling water till insipid. Dry the precipitate on a plaster bat;—but, being fulminative, must be kept quite cold, and not be triturated until mixed with flux. The flux is, a fritt of flint, 38; borax, 32; red lead, 28; glass, 2.—Grind well with silver, 1; to precipitate, 9; and flux 30 to 40 parts.

Red.—The peroxide of iron, by calcining copperas over a fire, and frequent washing. For use, grind calx, 25, and 75 of flux; a fritt, glass, 66; red lead, 25; borax, 9.

Brown.—Dark.—Brown oxide of iron, 30; flux, 70;—fritt, glass, 86; calx, borax, 14.—*Light.* Calx umber, 14; yellow calx, 14; peroxide of iron, 6; flux (red), 66.

Purple Distance.—Purple, 12; mangauese, 18; flux, 70.

Green.—Blue. Sulphate of copper calcined, 20; flux, 80—Fritt. Borax, 16; white enamel, 16; red lead, 50; flint, 18.

Green.—Grass. Blue green, 77; enamel yellow, 23.
Yellow. do. 66; do. 34.
Yellow.—Naples yellow, 33; flux, 67. See *Green.*
Orange.— do. 25; biscuit orange, 25; flux, 50.

After being properly dried, and ground at a mill, each colour is ground on a very hard stone, or glass plate, and afterwards used with spirits of turpentine, and hair pencils.

That the enamels may answer, the glaze must correspond therewith, else the dilution will cause a design, apparently finished, to come out of the muffle a mere sketch; while the flux must bake at the same heat as the glaze, to preserve the brilliancy of the metallic base, and neither craze, nor scale off.

The repetitions of the artist's efforts are indispensable to the finished appearance of many designs; which only by several bakings can receive that softness of colouring, and unfading brilliancy, which are essential to their elegance and full effect. The softness of the glaze during baking allows the metallic base to be imbedded therein, and when cold to be smooth and brilliant. The alkaline glazes, on this account, are only excelled by that of felspar, which in baking, receives the colours, and improves their tints.

Gilding of China and Earthenware.—This manipulation, (in which, as well as the preceding, there is opportunity for displaying the greatest taste,) employs hair pencils and oil of turpentine, with a preparation of the proto-muriate of gold, (obtained by dropping muriate of gold into a solu-

tion of caustic potass,) ground with 1 sixth part of mercury in oil, and applied at the pleasure of the artist.

Ground laying is frequently adopted prior to gilding; and is thus effected:—Well boiled linseed oil, turpentine, and red lead, as a fluid, the artist lays even all the proper parts of the ware, by a pencil of suitable size. He then with a lock of cotton applies the powder of the enamel colour, with one-tenth additional flux; and carefully adjusts the coating, so that all the parts may be equally covered. This is then baked in the muffle, and consequently gilded.

CHIO; called by the ancients *Chios*. See *Scio*.

CHIPPEWAY; a town in Upper Canada, on the Chippeway or Welland, two miles N. W. Niagara falls, ten S. Queenstown. This place is famous for a victory gained near it by the American troops over the British, July 5, 1814.

CHIPPEWAY; a river of the United States in the North-West Territory, which runs S.W. into the Mississippi; lon. 92° W.; lat. 43 45′ N.; length about 300 miles.

CHIPPEWAYS; Indians, in the North-West Territory, on the Chippeway, in Michigan Territory, and in Canada on the Utawas. Number, according to Pike, 11,177; 2049 warriors. See *Indians*.

CHIQUITOS; a province of S. America, in Buenos Ayres, inhabited, in 1732, by seven Indian nations, each composed of about 600 families. The country is mountainous and marshy; but the more fertile soils produce a variety of fruits without culture. The varilla is common, and a kind of cocoa is found, whose fruit is more like a melon than a cocoa-nut. It lies to the south of Moxes.

CHIRAGRA (*Greek*; from χειὴ, the hand, and ἄγρα, a seizure); that species of arthritis, or gout, which attacks the joints of the hand (the wrist and knuckles) and hinders their motions. It gradually deprives the hands of their flexibility, and bends the fingers, distorts them, and impedes their action, by the accumulation of a calcareous matter around the sinews, which finally benumbs and stiffens the joints.

CHIROGRAPH. See *Charter*.

CHIROLOGY; the language of the fingers, or the art of making one's self understood by means of the hands and fingers. It is an important means of communication for the deaf and dumb.

CHIROMANCY (from the Greek), or PALMISTRY; the pretended art of prognosticating by the lines of the hand. Its adherents maintain, that human inclinations, faults, and virtues are designated in an infallible manner by the lines which divine Providence has originally drawn in the hands of all men. Traces of chiromancy are found in the writings of Aristotle, who asserts, for instance, that it is a sign of a long life if one or two lines run across the whole hand. The chiromancers quote some passages of the Bible to prove that their art is founded on the divine decrees, as the following:—"And it shall be for a sign unto thee upon thine hand, and for a memorial between thine eyes" (*Exodus* xiii. 9); and, "He sealeth up the hand of every man, that all men may know his work" (*Job* xxxvii. 7). In the middle ages, chiromancy was cultivated; and, in the present age, the French chiromancer madame Lenormand found, as she states, some eminent adepts in Paris, and in her travels to the different European congresses. The books in which chiromancy is explained and taught are numerous; and, in order to give dignity to the art, it has been connected with astrology. The Gipseys are at present the principal professors of chiromancy, and people who have no faith in the art not unfrequently amuse themselves with their predictions.

CHIRON; son of Saturn and Philyra. Saturn assumed the shape of a horse, in this amour, to deceive his wife Rhea. The shape of Chiron, therefore, was half that of a man, half of a horse. In point of fact, Chiron was one of the people called *Centaurs*. He was celebrated through all Greece for his wisdom and acquirements; and the greatest princes and heroes of the time—Bacchus, Jason, Hercules, Achilles, Æsculapius, Nestor, Theseus, Palamedes, Ulysses, Castor, and Pollux, &c.—were intrusted to him for education. Besides the other branches in which young men of rank were instructed at that time, they learned from him music and medicine. He was particularly skilled in surgery. When Hercules drove the Centaurs from mount Pelion, they took refuge with Chiron, in Malea; but their enemy pursued them even into this retreat, and unfortunately wounded his old teacher with a misdirected arrow. The speedy operation of the poison, in which the arrow had been dipped, rendered remedies useless; and Chiron suffered the severest torments. The gods, at his prayer, put an end to his life, though his nature was immortal by reason of his descent from Saturn. After his death, he was placed among the stars, and became the constellation Sagittarius.

CHIRONOMY (χειρονομία, Greek; from χειὴ, the hand, and νόμος, a rule); the science which treats of the rules of gesticulation, which is a part of pantomime. The ancient orators recognised the importance of gesticulation as a means of giving expressiveness to a discourse. See Gilbert Austin's *Chironomia, or a Treatise on Rhetorical Delivery*, London, 1806.

CHIVALRY (from the French *chevalier*, a horseman; in German, *Ritter*, which signifies likewise a *rider* on horseback). Poets still sometimes use *chivalry* for *cavalry*; but this word is generally employed to signify a certain institution of the middle ages. The age of chivalry is the heroic age of the Teutonic-Christian tribes, corresponding to the age of the Grecian heroes. This heroic period of a nation may be compared to the youth of an individual; and we find, therefore, nations, in this stage of their progress, distinguished by the virtues, follies, and even vices, to which the youth of individuals is most prone—thirst for glory, enthusiasm, pride, indescribable and indefinite aspirations after something beyond the realities of life, strong faith in virtue and intellectual greatness, together with much vanity and credulity. Chivalry, in the perfection of its glory and its extravagance, existed only among the German tribes, or those which were conquered by and mingled with them, and whose institutions and civilization were impregnated with the Teutonic spirit. Therefore we find chivalry never fully developed in Italy, because the Teutonic spirit never penetrated all the institutions of that country, as it found a civilization already established, of too settled a character to be materially affected by its influence. We do not find much of the chivalric spirit in Greece, nor among the Sclavonic tribes, except some traces among the Bohemians and the Poles, who had caught a portion of it from the Germans. Among the Swedes, though a genuine Teutonic tribe, chivalry never struck deep root; but this is to be ascribed to their remote situation, and to the circumstance that they early directed their attention to navigation and naval warfare, which, in many ways, were unfavourable to the growth of the chivalric spirit; affording, for instance, comparatively little opportunity for that display of courage and accomplishment in the eyes of admiring multitudes, or in the adventurous quests of the single knight, which formed so striking a feature of the chivalric age. Poets and orators are fond of declaring that the chivalric spirit is gone. The famous passage in Burke's Reflections is familiar to every one; but the man who coolly investigates the character of past times, and compares them with the present, will hardly come to the conclusion that our age is deficient in any of the qualities which constituted the glory of

the age of chivalry. Their strength is the same; their direction only is changed. Is it courage which has departed? The soldier, who steadily marches up to the jaws of a battery, can hardly be considered less brave than the knights of former days, who cased their bodies in steel to meet far less formidable means of destruction. The late wars in Europe abound with displays of valour, which may compete with any recorded in history or romance. In the battle of Dresden, the emperor Napoleon (as Oldeleben relates in his account of Napoleon's campaign in Saxony), being seated before the Pirna gate, and seeing the artillerists in a redoubt shrink from serving the cannon, because the Prussian riflemen shot every man who presented himself, turned to his old guard, and said, "Show them how Frenchmen behave in battle;" when some of the soldiers addressed immediately sprang upon the redoubt, and marched up and down, in full view of the enemy, till they were shot. Of chivalric self-sacrifice, we can hardly find a more striking instance than that of a Prussian officer of the corps of colonel Schill (q. v.), who when his comrades were condemned to death at Wesel, by a French court-martial, for a military expedition in contravention of the existing peace, refused the pardon which was proferred to him alone by Napoleon, and preferred to die with his fellow soldiers. Are we referred to the enthusiastic self-devotion which crowded the plains of Palestine with the thousands of European chivalry, eager to shed their blood for the tomb of their Saviour? We say the same spirit in our days has chosen a nobler direction: the adventurers who expose themselves to every peril in the cause of science and human improvement, the Humboldts, Clappertons, Burckhardts, display equal heroism in a worthier cause. We would not govern ourselves by so narrow a theory of utility as to refuse to acknowledge what was really great and sublime in the spirit of chivalry, but we cannot admit that the virtues of the chivalric age have vanished, because they now appear with less show and gorgeousness.

To explain the nature and origin of chivalry, we must consider the character of the ancient German tribes. The warlike spirit was common to them with other barbarous nations; but there were certain traits in their character peculiarly their own. Among these was their esteem for women. This is dwelt upon by Tacitus, and is sufficiently apparent from the early native German historians. This regard for the female sex was diffused by them through every country into which they spread, though with considerable difference in the forms in which it developed itself. In France, it became that refined gallantry, for which the nation has been so long conspicuous; in Spain, it assumed a more romantic and glowing character, displaying much of the fire of Oriental feeling; in Germany itself, it became faithful and tender attachment to the wedded wife. Undoubtedly the Christian religion assisted in developing this feeling of esteem for the female sex in those times, particularly by the adoration of the Virgin, which was taught as a part of it. The constant reverence of this deified image of chastity and female purity must have had a great effect. We do not conceive, however, that the elevated condition of women can be referred entirely to the Christian religion, as we see that it has not produced this effect in the instance of nations who have had no opportunity of imbibing the Teutonic spirit; and many Asiatic nations recognise that feature of this religion, to which we have attributed so much efficacy, (namely the birth of the being whom they worship from a virgin,) and yet keep their women in a very degraded condition. We may be told, in answer to our claim of the peculiar regard for the female as a characteristic of the Teutonic tribes, that women were held in high esteem by the Romans. It is true that wives and mothers were treated with great regard by the Romans, and the history of no nation affords more numerous instances of female nobleness; but this esteem was rendered to them, not as females, but as the faithful companions and patriotic mothers of citizens. It had somewhat of a political cast. But this was not the case with the Germans. There is another trait of the German character, which deserves to be considered in this connexion, which is very apparent in their literature, and the lives of many individuals; we mean that indefinite thirst for something superior to the realities of life, that *sehnen*, to use their own word, which hardly admits of translation, which has produced among them at the same time so much excellence and so much extravagance. These three traits of the Teutonic race, their warlike spirit, their esteem for women, and their indefinable thirst for superhuman greatness, together with the influence of the feudal system and of the Roman Catholic religion, afford an explanation of the spirit of chivalry—an institution which, to many observers, appears like an isolated point in history, and leaves them in doubt whether to despise it as foolish, or admire it as sublime. The feudal system divided the Christian Teutonic tribes into masses, the members of which were united, indeed, by some political ties, but had little of that intimate connexion which bound men together in the communities of antiquity, and has produced like effects in our own and a few preceding ages. They still preserved, in a great measure, the independence of barbarians. There was, however, one strong bond of union, which gave consistency to the whole aggregate; we mean the Roman Catholic religion, which has lost much of its connecting power, in proportion as other ties, chiefly those of a common civilization, have gained strength. The influence of this religion was of great service to mankind during the ages of ignorance and violence, by giving coherency to the links of the social chain, which were continually in danger of parting. To this cause is to be ascribed the great uniformity of character which prevailed during the ages of chivalry. The feudal system, besides, enabled the gentry to live on the labours of the oppressed peasants, without the necessity of providing for their own support, and to indulge the love of adventures incident to their warlike and ambitious character. If we now combine the characteristics which we have been considering—a warlike spirit, a lofty devotion to the female sex, an undefinable thirst for glory, connected with feudal independence, elevation above the drudgery of daily toil, and a uniformity of character and purpose, inspired by the influence of a common religion—we obtain a tolerable view of the chivalric character. This character had not yet quite developed itself in the age of Charlemagne. The courage exhibited by the warriors of his age was rather the courage of individuals in bodies. The independence, the individuality of character, which distinguished the errant knight who sought far and wide for adventures to be achieved by his single arm, was the growth of a later period. The use of the war-horse, which formed so essential an instrument of the son of chivalry, was not common among the Germans until the time of their wars with the Huns. They were indeed acquainted with it before, and Tacitus mentions it in his account of Germany; but it was not in common use among them till the period we have mentioned. After it was introduced, cavalry was considered among them, as among all nations in the early stages of their progress, much superior to infantry, which was, in fact, despised, until the successes of the Swiss demonstrated its superiority. In the eleventh century,

knighthood had become an established and well defined institution; but it was not till the fourteenth that its honours were confined exclusively to the nobility (q. v.). The crusades gave a more religious turn to the spirit of chivalry, and made the knights of all Christian nations known to each other, so that a great uniformity is thenceforward to be perceived among them throughout Europe. Then arose the religious orders of knights, the knights of St John, the templars, the Teutonic knights, &c. The whole establishment of knighthood assumed continually a more formal character, and, degenerating, like every human institution, sank at last into Quixotic extravagances, or frittered away its spirit amid the forms and punctilios springing from the pride and the distinctions of the privileged orders of society. It merged, in fact, among the abuses which it has been one of the great labours of our age to overthrow. The decline of chivalry might be traced through the different forms which it assumed in different nations as distinctly as its developement—a task too extensive for this work.

The education of a knight was briefly as follows:—The young and noble stripling, generally about his twelfth year, was sent to the court of some baron or noble knight, where he spent his time chiefly in attending on the ladies, and acquiring skill in the use of arms, in riding, &c. This duty of waiting about the persons of the ladies became, in the sequel, as injurious to the morals of the page as it may have been salutary in the beginning. When advancing age and experience in the use of arms had qualified the page for war, he became an *escuyer* (esquire or squire). This word is generally supposed to be derived from *escu* or *scudo* (shield), because among other offices, it was the squire's business to carry the shield of the knight whom he served. The third and highest rank of chivalry was that of knighthood, which was not conferred before the twenty-first year, except in the case of distinguished birth or great achievements. The individual prepared himself by confessing, fasting, &c.; religious rites were performed; and then, after promising to be faithful, to protect ladies and orphans, never to lie, nor utter slander, to live in harmony with his equals, &c. (in France, there were twenty vows of knighthood) he received the *accolade* (q. v.), a slight blow on the neck with the flat of the sword, from the person who dubbed him a knight, who, at the same time, pronounced a formula to this effect: "I dub thee knight, in the name of God and St Michael (or in the name of the Father, Son, and Holy Ghost). Be faithful, bold, and fortunate." This was often done on the eve of battle, to stimulate the new knight to deeds of valour, or, after the combat, to reward signal bravery.

Though no man of any reflection would wish for the return of the age of chivalry, yet we must remember that chivalry exercised, in some respects, a salutary influence at a time when governments were unsettled and laws little regarded. Though chivalry often carried the feelings of love and honour to a fanatical excess, yet it did much good by elevating them to the rank of deities; for the reverence paid to them principally prevented mankind, at this period of barbarous violence, from relapsing into barbarism; and, as the feudal system was unavoidable, it is well that its evils were somewhat alleviated by the spirit of chivalry. The influence which chivalry had on poetry was very great. The *troubadours* in the south of France, the *trouveres* in the north of the same country, the *minstrels* in Britain, the *Minnesanger* in Germany, sang the achievements of the knights who received them hospitably. (See *Ballad*). In Provence arose the *cours d'amour* (q. v.), which decided the poetical contests of the knights. Amorous songs (*chansons*), duets (*tensons*), pastoral songs (*pastourelles*), and poetical colloquies (*sirventes*) were performed. In Germany, the chivalric spirit produced one of the most splendid and sublime epics, the *Nibelungenlied* (q. v.). By the intercourse with the East, which grew up during the crusades, fairies, and all the wonders of enchantment, were introduced into the romantic or chivalric poetry. It is probable, however, that there existed something of the same kind before the influence of the East was felt; for instance, the stories of the enchanter Merlin. Chivalric poetry, in our opinion, begins, as Schlegel has shown, with the mythological cyclus of king Arthur's round table. The second cyclus is that of Charlemagne and his paladins, his twelve peers, which remained the poetical foundation of chivalric poetry for many centuries. The cyclus of Amadis (q. v.), which belongs, perhaps, exclusively to Spain, does not rest on any historical ground. For further information, see the article *Chivalry*, in the supplement to the *Encyclopædia Britannica*, written by Sir Walter Scott, which contains many interesting facts, though the writer does not investigate very deeply the spirit of the institution. The article *Chevalerie*, in the *Encyclopédie Moderne*, is full of valuable information. The preface to lord Byron's Childe Harold should not be forgotten. See also Heeren's *Essay on the Influence of the Crusades*, translated into French from the German; Busching's *Vorlesungen uber Ritterzeit und Ritterwesen*, Leipsic, 1823, 2 vols.; *Mémoires sur l'ancienne Chevalerie, par Lacurne de Sainte-Palaye*, Paris, 1826, 2 vols., with engravings; and last, but not least, *Don Quixote*. See also the article *Tournament*, and the other articles in this work connected with this subject.

CHLORIC ACID. See *Chlorine*.

CHLORIDE OF NITROGEN. See *Chlorine*.

CHLORINE. The discovery of this gas was made in 1770, by Scheele, and named by its discoverer, *dephlogisticated marine acid*. The term *dephlogisticated* had exactly the same import as that of *oxygenated*, soon afterwards introduced by Lavoisier. From its peculiar yellowish-green colour, the appellation of *chlorine* (from χλωρὸς, green) has been given to it. Chlorine gas is obtained by the action of muriatic acid on the peroxide of manganese. The most convenient method of preparing it is by mixing concentrated muriatic acid, contained in a glass flask, with half its weight of finely-powdered peroxide of manganese. On the application of a moderate heat, the gas is evolved, and should be collected in inverted glass bottles, filled with warm water. In order to comprehend the theory of this process, it must be premised that muriatic acid consists of chlorine and hydrogen. The peroxide of manganese is composed of manganese and oxygen. When these compounds react on one another, the peroxide of manganese gives up a portion of its oxygen to the hydrogen of the muriatic acid, in consequence of which water is generated, and chlorine (the other ingredient in muriatic acid) is liberated. The method which is employed in the arts, and which is the most economical, is the following:—Three parts of common salt (muriate of soda) are intimately mingled with one of the peroxide of manganese, and to this mixture two parts of sulphuric acid, diluted with an equal weight of water, are then added. By the action of sulphuric acid on the muriate of soda, muriatic acid is disengaged, which reacts as before explained upon the peroxide of manganese; so that, instead of adding muriatic acid directly to the manganese, the materials for forming it are employed. Chlorine is gaseous under a common atmospheric pressure. It is twice and a half heavier than atmospheric air, or its specific gravity is 2·5. The gas has a yellowish-green

colour. Of all the gases, it is the most insupportable in its action on the lungs. When pure, it occasions immediate death if an animal is immersed in it; and even when largely diluted with common air, it cannot be respired with safety. It occasions a severe sense of stricture at the breast, which renders it impossible to make a full inspiration. This continues for a considerable time after it has been inspired, and has often produced a permanently injurious effect. When thoroughly dried, by exposure to fused chloride of calcium, it suffers no change, though cooled to 40°. When prepared over water, however, so as to contain a quantity of aqueous vapour, it condenses on the sides of the vessel even at a temperature of 40°; and, if surrounded by snow or ice, it shoots into acicular crystals of a bright yellow colour, and sometimes two inches in length, which remain attached to the sides of the vessel. This solid is a hydrate of chlorine, and, when heated to 50°, it melts into a yellowish oily fluid. Chlorine is absorbed by water, in a quantity which increases as the temperature diminishes. At 50°, the water takes up about twice its volume. The solution has a yellowish-green colour, and its odour is that of the gas itself. Its taste is rather styptic than sour, and the liquid, like the gas, has the property of destroying the vegetable colours. Hence it may be employed in bleaching. It is not changed by a boiling temperature. Solution of chlorine is decomposed, however, by exposure to the solar light; the chlorine attracts hydrogen from the water, forming muriatic acid, which remains dissolved, and pure oxygen is disengaged. Chlorine gas supports the combustion of a number of inflammable substances. A lighted taper burns in it, though feebly, with a red flame; phosphorus takes fire when immersed in it; and a number of the metals, as antimony, arsenic, copper, and others, if introduced into it in leaves or filings, burn spontaneously. Potassium and sodium burn vividly in it. In these cases, the inflammable or metallic substances are believed simply to unite with the chlorine. Chlorine combines with many of these bases in more than one proportion. When in one proportion, the compound is called a *chloride*; when in two, a *bi-chloride*, or a *deuto-chloride*, &c. Whenever a metallic chloride, which is soluble in water, is thrown into that fluid, it is conceived to be instantly converted into a muriate; the water present is decomposed, its oxygen goes to the metallic base, and its hydrogen to the chlorine, and a muriate of an alkali, earth, or metallic oxide, is formed. Thus common salt, when dry, is a chloride of sodium: it is no salt, containing neither acid nor alkali, but, whenever it is dissolved in water, it is immediately transformed into a salt: the sodium attracts oxygen and becomes soda, and the chlorine takes hydrogen and becomes muriatic acid, and muriate of soda exists in the solution. When any of the compounds of chlorine, with inflammable substances or metals, are subjected to the action of a galvanic apparatus sufficiently powerful to decompose them, the chlorine is always evolved at the positive pole of the battery, and the base at the negative pole. In this respect, and in its power of supporting combustion, chlorine is analogous to oxygen. One of the most important chemical properties of chlorine is displayed in its action on the vegetable colours. Many of them it entirely destroys; and even those which are the most deep and permanent, such as the colour of indigo, it renders faint, and changes to a light yellow or brown. This agency is exerted by it, both in its gaseous and its liquid form. The presence of water is, however, necessary to this. Hence, when the gas destroys colour, it must, probably, be enabled so to do by the hygrometric water it contains. It is accordingly found, that, when freed from this, it does not destroy the colour of dry litmus paper. The destruction of colour appears to be owing to the communication of the oxygen of the water present to the colouring matter: the chlorine attracts the hydrogen of the water to form muriatic acid, and the evolved oxygen unites with the colouring matter, and, by changing its constitution, alters its relation to light, so that the tint disappears. Berthollet applied this agency of chlorine to the process of bleaching, and with such success as to have entirely changed the manipulations of that art. The method of using it has been successively improved. It consisted, at first, in subjecting the thread or cloth to the action of the gas itself; but the effect, in this way, was unequally produced, and the strength and texture were sometimes injured. It was then applied, condensed by water, and in a certain state of dilution. The thread, or cloth, was prepared as in the old method of bleaching, by boiling first in water, and then in alkaline lye; it was then immersed in the diluted chlorine: this alternate application of alkali and chlorine was continued until the colour was discharged. The offensive, suffocating odour of the gas rendered this mode of using it, however, scarcely practicable; the odour was found to be removed by condensing the chlorine by a weak solution of potash: lime, diffused in water, being more economical, was afterwards substituted. Under all these forms, the chlorine, by decomposing water, and causing oxygen to be imparted to the colouring matter, weakens or discharges the colour, and the colouring matter appears to be rendered more soluble in the alkaline solution, alternately applied, and of course more easily extracted by its action. More lately, a compound of chlorine and lime has been employed, prepared by exposing slacked lime to chlorine gas: the gas is quickly absorbed, and the *chloride of lime*, as it is called, being dissolved in water, forms the bleaching liquor now commonly employed, and which possesses many advantages. In using it, the coloured cloth is first steeped in warm water to clean it, and is then repeatedly washed with a solution of caustic potash, so diluted that it cannot injure the texture of the cloth, and which is thrown upon it by a pump; the cloth is then washed and steeped in a very weak solution of chloride of lime, again washed, acted on by a boiling lye as before, and again steeped in the solution; and these operations are performed alternately several times. The cloth is lastly immersed in very dilute sulphuric acid, which gives it a pure white colour; after which it is washed and dried. Chloride of magnesia has been substituted, with great advantage, for that of lime, in whitening cloth for calico printing; the cloth, when lime is used, retaining a little of it, which, in the subsequent operation of clearing by immersion in weak sulphuric acid, forms sulphate of lime, which remains, and affects the colours when it is dyed; while the sulphate of magnesia is so soluble, that it is entirely removed. Chloride of alumine has been employed to discharge the colour of the Turkey-red dye, which resists the action of other chlorides, and is only discharged by chlorine gas, by an operation very injurious to the workmen. Another important application of chlorine gas is that of destroying or neutralizing contagion. Acid vapours, sulphurous acid in particular, under the form of the fumes of burning sulphur, had often been employed for that purpose; but chlorine, from the facility with which it decomposes the different compound gases that contain the elements of vegetable and animal matter, and which may be supposed to constitute noxious effluvia, is superior to any other agent, and is now universally employed for the purposes of fumigation. It is the only agent which can administer relief in cases of asphyxia from sulphuretted hydro-

gen; and it has been found useful, among such persons as are obliged to frequent places where contagious effluvia are constantly developed, to bathe the hands and arms with its solution. Chlorine, united with hydrogen, forms an important compound, called *muriatic*, or *hydrochloric acid gas*. (See *Muriatic Acid*). With oxygen, it gives rise to four distinct compounds, which are remarkable for the feeble attraction of their constituent elements, notwithstanding the strong affinity of oxygen and chlorine for most elementary substances. These compounds are never met with in nature. Indeed, they cannot be formed by the direct combination of their constituents; and their decomposition is effected by the slightest causes. Notwithstanding this, their union is always regulated by the law of definite proportions, as appears from the following tabular view, illustrative of their composition.

	Chlorine.	*Oxygen.*
Protoxide of chlorine	36	8
Peroxide of chlorine	36	32
Chloric acid	36	40
Perchloric acid	36	56

Chlorine forms, along with nitrogen, one of the most explosive compounds yet known, and was the cause of serious accidents to M. Dulong, its discoverer, and afterwards to Sir H. Davy. The *chloride of nitrogen* is formed from the action of chlorine on some salt of ammonia, chlorine and nitrogen being incapable of uniting, when presented to each other in their gaseous form. Its formation is owing to the decomposition of ammonia (a compound of hydrogen and nitrogen) by chlorine. The hydrogen of the ammonia unites with chlorine, and forms muriatic acid; while the nitrogen of the ammonia, being presented in its nascent state to chlorine, dissolved in the solution, enters into combination with it. The chloride of nitrogen has a specific gravity of 1·653; it does not congeal by the intense cold produced by a mixture of snow and salt. At a temperature between 200° and 212° it explodes; and mere contact with most substances of a combustible nature causes detonation at common temperatures. The products of the explosion are chlorine and nitrogen. Three distinct compounds of *chlorine* and *carbon* have of late been made known by Faraday; but for an account of these, as well as of the *chlorides of sulphur and of phosphorus*, and the *chloro-carbonic acid gas*, the reader is referred to the larger treatises on chemistry, it being incompatible with the plan of the present work to enter into those details which are not connected with the useful arts, or which are not absolutely necessary in order to afford a correct idea of the mode of reasoning and general theory of the science.*

CHLORITE. See *Talc*.

CHOC (from the French *choc*, the violent meeting of two bodies), in military language, signifies a violent attack. It is generally applied to a charge of cavalry. To give such an attack its full effect, it is necessary, 1. that the line be preserved unbroken, so that the attack shall take effect at all points at the same time; 2. that the horses be strong and heavy, that their momentum may be great; 3. that the charge be made as swiftly as possible, not merely for the sake of the physical effect, but also of the moral effect which it has on the enemy. This swiftness, however, must be attained gradually, increasing as the distance diminishes. The charge commences with a short trot; a long trot follows; at the distance of 150 paces, this is increased to a gallop; and 50 paces from the enemy, the horse must be put to his speed. A choc, whether successful or not, is of short duration.

CHOCOLATE. See *Cacao*.

CHOCTAWS, or FLAT-HEADS; a tribe of Indians, residing between the Mississippi and the Tombigbee, partly in Alabama, but mostly in Mississipi. Their territory is bounded N. and N. E. by that of the Chickasaws. The country has a fertile soil, and is traversed by the upper waters of the Yazoo, Big Black, and Pearl rivers. Their number is estimated at about 20,000 or 25,000. They are a hardy, intrepid, and ingenious race, and have made, within the last twenty years, great advances in agriculture and other arts of civilized life. They raise cotton, and manufacture it into cloth for their ordinary use, and often appear well clad in garments of their own making. In 1818, the American board of foreign missions established a mission among the Indians at Elliot, on the Yalo Busha, a branch of the Yazoo; and, since that period, eight other similar establishments have been formed. See *Indians*.

CHOCZIM (*Chotschim*); an important frontier fortress of Russia, on the right bank of the Dniester, opposite to Kaminiec, in Bessarabia, with 25,000 inhabitants and a considerable trade. The people are entirely employed in furnishing supplies for the army. The Turks caused Choczim to be regularly fortified, in 1718, by French engineers; but it was taken by the Russians in 1730, 1769, and 1788. As the Pruth, in Europe, is, at present, the boundary of the two empires, the situation of Choczim renders it of great importance as an arsenal and place of rendezvous.

CHODOWIECKI, Daniel Nicholas, a painter and engraver, was born at Dantzic, 1726, and received from his father, in his leisure hours, his first instruction in miniature painting, which he practised with great assiduity, in order to support his mother, after the death of his father. His first trials excited the astonishment of connoisseurs. A little engraving, the *Play at Dice*, in 1756, particularly attracted the attention of the academy of Berlin. During the seven years' war, he engraved various subjects connected with it; among others, the *Russian Prisoners at Berlin*, which is now rare. The history of the unhappy Calas gave him an affecting subject for a picture, which, at the desire of all who saw it, he engraved on copper. The impressions of the year 1767 are particularly esteemed. Almost all the plates to Lavater's Physiognomical Fragments are from his designs. He engraved several of them himself. At last, scarcely a book appeared in Prussia, for which he did not engrave at least a vignette. The number of his engravings is more than 3000; but we must observe, that he was in the habit of making changes in his plates, after a number of copies had been struck off, so that all the copies of the same plate are not entirely alike. He must be considered the founder of a new art in Germany—that of representing modern figures. He died, Feb. 1, 1801, at Berlin, where he was director of the academy of arts. He was universally esteemed for his integrity.

CHOIR; that part of the church where the choristers sing. In some old churches, the seats of the choristers, and other parts of the choir, are ornamented with admirable carved work. See *Architecture*, vol. I, page 343, sect. vii., *Gothic style*.

CHOLERA (Celsus derives it from χολὴ and ῥέω, literally, a flow of bile, and Trallian from χολὰς and

* A letter of M. Dauvergne to M. Gay-Lussac, in the *Ann de Chimie*, recently published, states the effect of chlorine as an antidote of hydrocyanic acid. A cat, to which two drops of hydrocyanic acid were given through the lachrymal gland, was affected most violently by the poison. While the animal was in this condition, some chlorine was put into her mouth, and, one hour after, she was able to make a few tottering steps: the next morning the animal was quite well. It has also been lately stated, in the public journals, that the French physicians have found chlorine very effectual in preserving from the plague, if put on the linen, &c.

ῥέω, intestinal flux); *diarrhœa cholerica; felliflua passio;* a genus of disease arranged by Cullen in the class *neuroses* and order *spasmi*. It is a purging and vomiting of bile, attended with anxiety, painful gripings, spasms of the abdominal muscles, and those of the calves of the legs. There are two species of this genus:—1. *Cholera spontanea*, which happens, in hot seasons, without any manifest cause. 2. *Cholera accidentalis*, which occurs after the use of food that digests slowly and irritates. In warm climates, it is met with at all seasons of the year, and its occurrence is very frequent; but in England, and other cold climates, it is most prevalent in the middle of summer, particularly in the month of August; and the violence of the disease has usually been greater in proportion to the intenseness of the heat. It usually comes on with soreness, pain, distension, and flatulency in the stomach and intestines, succeeded quickly by a severe and frequent vomiting, and purging of bilious matter, heat, thirst, a hurried respiration, and frequent but weak and fluttering pulse. When the disease is not violent, these symptoms, after continuing for a day or two, cease gradually, leaving the patient in a debilitated and exhausted state; but where the disease proceeds with much violence, great depression of strength ensues, with cold, clammy sweats, considerable anxiety, a hurried and short respiration, and hiccoughs, with a sinking and irregularity of the pulse, which quickly terminate in death —an event that not unfrequently happens within the space of twenty-four hours. The appearances generally observed on dissection are, a quantity of bilious matter in the *primæ viæ;* the ducts of the liver relaxed and distended. Several of the viscera have been found, in some cases, displaced, probably by the violent vomiting. In the early period of the disease, when the strength is not much exhausted, the object is, to lessen the irritation, and facilitate the discharge of the bile, by tepid demulcent liquids, frequently administered. It will likewise be useful to procure a determination to the surface, by fomentations of the abdomen, by the foot bath or even the warm bath. But where the symptoms are urgent, and the patient appears rapidly sinking from the continued vomiting, violent pain, &c., it is necessary to give opium freely, but in a small bulk, from one to three grains, or even more, in a table spoonful of linseed infusion, or with an effervescing saline draught, which must be repeated at short intervals, perhaps every hour, till relief be obtained. Sometimes, where the stomach could not be got to retain the opium, it has answered in the form of clyster; or a liniment containing it may be rubbed into the abdomen; or a blister, applied over the stomach, may lessen the irritability of that organ. Afterwards the bile may be allowed to evacuate itself downwards; or mild aperients, or clysters, given, if necessary, to promote its discharge. When the urgent symptoms are relieved, the strength must be restored by gentle tonics, as the aromatic bitters, calumba, and the like, with a light, nutritious diet: strong toast and water is the best drink, or a little burnt brandy may be added, if there is much languor. Exposure to cold must be carefully avoided. The abdomen and the feet, particularly, must be kept warm, and great attention is necessary to regulate the bowels, and procure a regular discharge of bile, lest a relapse should happen. It will also be proper to examine the state of the abdomen, whether pressure give pain at any part, because inflammation in the *primæ viæ* is very liable to supervene, often in an insidious manner. Should that be the case, leeches, blistering the part, and other suitable means, must be promptly resorted to.

CHOLERA MORBUS, Cholera Asphyxia, Cholera Maligna, Cholera Epidemica, Epidemic Cholera Fever. All these names have been applied to a formidable disease, which is now, for the first time, known to be extensively epidemic in the world, and whose origin and ravages will be reckoned among the most distinguishing events of the present century. This disease is in its principal symptoms altogether very different from *English Cholera* (see the previous article), yet many persons have confounded them. In Hindostan, spasmodic cholera has probably always existed as a comparatively mild climatic disease, affecting at certain seasons of the year a small number of individuals in various parts of the country. There is no evidence to show that the Indian cholera ever bore the epidemic character, or was entitled to rank with pestilential scourges of the worst description till the beginning of August, 1817, when it suddenly broke out with unprecedented malignity.

Commencing among the inhabitants of Jessore, a town one hundred miles N. E. of Calcutta, in less than a month it travelled along the course of the river to that city, having desolated the intervening villages. Before the expiration of August, the native population of Calcutta were attacked, and early in September the disease was also manifested among the Europeans. From January to May, 1818, the pestilence raged with extreme violence, extending its destructive influence across Bengal, from Selhet to Cuttack; and towards the interior, from the mouth of the Ganges to its confluence with the Jumna, a space including four hundred and fifty square miles.

Leaving Bengal, the disease retired for some time to the western bank of the Ganges and Jumna. In its most malignant form it appeared at Benares, where in two months fifteen thousand persons perished. At Allahabad forty or fifty died daily. To other localities situated on either bank the disease soon spread, and the mortality was equally great. In the district of Gorrakpore, thirty thousand were carried off in a month. Then suffered in succession Lucknow, Cawnpore, Delhi, Agra, Muttra, Meerat, and Bareilly.

Between the 6th and 7th of November, the epidemic had reached the grand army, which on the approach of the Pindarree-war, had been concentrated at Jubbulpore, Mundellah, and Sauger, under the command of the marquis of Hastings. It consisted of ten thousand troops, and eighty thousand followers. To the different divisions of this force the cholera proved more fatally effective than could the shot of the enemy in a well contested field. In twelve days nearly nine thousand men had fallen to rise no more. At this time the thermometer ranged from 90° to 100° Farenheit. The heat was moist and suffocating, and the atmosphere a dead calm. The progress of the cholera in the centre division of the army, was as follows:—After creeping insidiously for a few days among the lower classes of the camp followers, it seemed instantaneously to gain fresh vigour, breaking out with irresistible force in every direction. Previous to the 14th, it had overspread the camp, sparing neither age nor sex in the indiscriminating violence of its attack. The old and the young, the European and the native, fighting men and camp followers were alike selected, and all equally sank within its death-grasp. From the 14th to the 20th, the mortality had become so extensive that the stoutest hearts were yielding to despair. The camp wore the aspect of a general hospital. The medical officers, night and day at their posts, were no longer able to administer to the numerous sick who continued to pour in from every quarter. At this time the scene was strikingly contrasted to what it had been a few days before. The noise and bustle almost inseparable from the presence of a multitude of human beings, had nearly subsided into stillness.

Nothing was to be seen in motion, save a solitary individual, here and there anxiously hurrying from one division of the camp to another to inquire after the fate of his companions. Nothing was to be heard but the groans of the dying, or the wailing for the dead. The natives, perceiving the only hope of safety in flight, now deserted in crowds. But their speed frequently deceived them. The fields and highways for miles round were covered with the bodies of many who had carried with them the seeds of the distemper.

A few months after its first appearance at Jessore, and while it was travelling through the northern provinces, it began to ravage along the eastern shore of the gulf of Bengal; and in 1819 it reached the kingdom of Arracan. From Arracan it extended itself into Siam, and after destroying 40,000 in Baku, the capital of that kingdom, it passed into the peninsula of Malacca. In October it entered the islands of Sumatra and Penang; Java and Borneo afterwards suffered; Canton was attacked in 1820, and at Pekin its mortality was so frightful, that the government were obliged to have the dead interred at their own expense. From China it passed to the Philippine and Spice islands. Thus, in little more than two years, did it traverse a space in Eastern Asia, which from north to south is not less than 1,300, and from west to east about 1,000 leagues in diameter.

Two months after cholera entered Madras, it travelled along the eastern shore of the peninsula, through Arcot to Palamcottah, from whence it traversed the strait, and entering the province of Jaffna, which is opposite to Palamcottah, it penetrated into the capital of Ceylon, which is situated in the very centre of the island. About the same period the Mauritius was attacked; and on the 14th of January, 1820, it appeared at the town of St Denis, in the isle of Bourbon, which is only forty leagues south-west of the Mauritius. In July, 1821, it betrayed itself at Muscat, on the southern extremity of the Arabian peninsula. The neighbouring islands of Ormus and Kishme, in the mouth of the Persian gulf, were shortly afterwards infected; by August, it had ascended along the eastern coast of Arabia, as far as the island of Bahreim; and not long after, it entered Bassorah, on the northern extremity of the Persian gulf. Opposite the little island of Ormus is the port of Bender-Abassi, in Persia, the principal seaport town in which the Persians conduct commerce with British India. The cholera broke out here with so much violence, that the bazaars were closed, and the dead left unburied. Those, who escaped its first onset, abandoned their houses, and sought for safety in flight. Shiraz, which is about 100 leagues north-west of Bender-Abassi, manifested symptoms of the pestilence in September, and during the first nine days, 4,500 persons perished. Yerd afterwards suffered, and by the time the disease had reached Ispahan, the cold season had far advanced, so that its severity was much lessened, and it soon wholly disappeared. On the recommencement of spring, however, it developed itself afresh, and spreading from Ispahan, where it had wintered, round the contiguous Persian provinces, it visited in succession Kermanshah, Cashan, Khom, Casbin, and Tauris, following, as it invariably did, whether in Asia or Europe, the great commercial lines of national intercourse. At Tauris, 4,800 perished in the short space of twenty-five days, when it left the town, and travelled on through Khaz, Erivan, and Kars, to Erzeroum on the southern shore of the Black sea. The prince royal of Persia had driven the Turkish army into this town, in the month of July; but immediately after his victory, cholera broke out with such devastating fury among the Persian forces, that from thirty to forty died daily, and the soldiers became so dispirited, that they precipitately retreated, and left the prince with his ministers to sign an armistice at Khoé.

Before the disease quitted Bassorah in 1821, from 15,000 to 18,000 of its inhabitants were destroyed; and so dreadful was the havoc which it made in the surrounding country, that Dr Meunier says, the third of the population fell before it. At Bagdad it was so prevalent, that a Persian army, which was marching against the town, were compelled to withdraw, but were pursued by the pestilence, and among the other losses which it sustained, their commander fell. In the spring of 1822, it appeared between the Tigris and Euphrates; in July it attacked Mosul, which is about sixty leagues north of Bagdad, and then travelling more westward, it passed through Merdine, Diarbekir, Orfa, Biri, and Antab, on its way to Aleppo, in Syria, which it reached in November. During the winter, as usual, it lay dormant, but in the spring of 1823 it revived, and visited Latakia, Antioch, Tortosa, Tripoli, and other towns on the borders of the Mediterranean sea. By the end of July it had advanced in the direction of Sarkin, Arsous, Khankaramout, and the gulf of Alexandretta; and passing over the high mountains of Beylam, it entered the towns of Adena and Tarsous. In 1824, it appeared at Tiberias, in Judea.

Thus were Arabia, Persia, Mesopotamia, and Syria, overrun by cholera in little more than two years; traversing every species of country, from the arid deserts of Irac-Arabia, to the succulent banks of the Euphrates, and depopulating almost every village in its path with a pertinacious obstinacy, which human skill was seldom able to overcome. It will be seen that the disease, during this journey, took two distinct routes through these countries, which it prosecuted with equal energy. By the one it penetrated Arabia, attacked Bassorah, ascended the Euphrates, ravaged Mesopotamia, and finally appeared in Syria, where it committed frightful havoc among the towns skirting the Mediterranean sea. By the other, it travelled through the very centre of Persia, until, in 1823, it reached the shores of the Caspian.

Early in September, 1823, it entered Astracan, a large and populous town seated on the northern shore of the Caspian, at the mouth of the Volga. The Russian fleet were first infected, but 216 persons were all who fell ill, and of these 144 died. As soon as it became known to the Russian government that Astracan was invaded, they dispatched a medical commission, composed of six physicians, to investigate its character; a physician was sent into Persia with the same view; a board of health was established at Petersburg, and every exertion was made to prevent its extension farther north. How far such preventive measures were connected with the result, it may be difficult to decide; but certain it is, that the disease got no farther in that direction that year than Astracan, and did not again appear in Russia until towards the close of 1828, when it unexpectedly entered the town of Orenburg, as is supposed by some through the caravans which came from Upper Asia, and by others, through the Kirghis-Cossacks, who neighbour Orenburg, and are said to have been infected by the disease. As the cold season commenced shortly after its appearance, the mortality which it occasioned was not great until the spring of 1829, when it raged with great severity, both in the town and neighbourhood, and entered the forts of Rassayphaya and Isetzk. On the 31st of July, 1830, it again appeared in Astracan; by the 10th of August, 1,229 were ill, of whom 433 died; and by the 27th, no fewer than 4,043 within the town, and 21,268 throughout the province of which it is the capital, perished. After committing this unprecedented destruction, it pursued a north-west course along the

banks of the Volga, making tributary to its power the populous towns of Saratoff, Penza, Samara, and Kazan. Kazan it reached on the 5th of September, and on the 26th of the same month its symptoms were first detected in Moscow. The town was immediately divided into forty-seven compartments, which were separated from each other by a *cordon sanitaire*; ten temporary hospitals were erected, and count Zakrewski, the minister of interior, was appointed by the Emperor to superintend these protective arrangements. The emperor himself visited the town when the disease was at its height, and when he left to go to Twer, by submitting to a quarantine of eight days, he gave an example of obedience to the sanatory laws. During the first ten days of October, 747 died; from the 10th to the 20th, 958 perished; and from the 20th to the 31st, 1,284 sunk under the disease. At first the mortality was as great as nine-tenths; it afterwards diminished to seven-eighths, five-sixths, three-fourths, one half, and ultimately to one-third. During even the winter months, which had been hitherto a complete specific against its progress, when all the rivers were covered with ice, it carried on its work of death; but the number who were infected gradually decreased, and the mortality proportionally diminished.

Having now travelled so far north, it was almost universally expected that the cholera would have soon reached Petersburg, and from thence have extended to the shores of the Baltic; but the capital, at this time escaped, and the disease, taking an almost opposite direction, accompanied the Russians into Poland. During the revolution of July, in 1830, a body of troops were ordered out of the province of Koursk, in the country of the Cossacks, which was then infected, to march against the Poles. These troops, in their passage through Podolia, and Volhynia, took with them the disease along their entire line of march. The towns of Astrog, Zaslaf, and Luck were infected; and a few leagues from this latter place the disease passed the Bug, and entered Poland. Lublin was attacked towards the end of March, 1831; by the 1st of April, the hospitals of Siedlec were filled with Russians labouring under the malady; ten days afterwards it was discovered among the wounded at Praga, which is separated from Warsaw only by the Vistula; and on the 14th it entered the capital of Poland. According to the central committee of health, from 100 to 150 died during the first week, out of every 1,000 sick; and according to the Berlin Gazette, during thirteen days, ending on the 5th of May, there had been between the town and the camp, 2,580 sick, of whom 1,110 died, and 1,278 still remained under treatment. On the 25th of May, it appeared at Riga, and by the 28th, it had reached Dantzic in Prussia, Brody and Lemberg in Austria. On the 26th of June the disease entered Petersburg; early in August it invaded Hungary, and by the beginning of September it entered Germany. In Nov., 1831, it reached Sunderland in England, and afterwards spread over the whole island, but was more particularly fatal in Scotland. In March, 1832, it broke out at Paris, where upwards of 20,000 fell a sacrifice to it in a short time. In June 1832 it appeared at Quebec in Canada, and has since spread over the whole American continent.

I. *Symptoms of Cholera in India.*—The disease generally made its attack in the night, or towards morning, with vomiting so excessive that the whole contents of the stomach appeared to be discharged; and, nearly at the same time, the bowels were copiously emptied, as though all the solid matters in the intestinal canal were evacuated. In some cases a watery purging preceded the vomiting by some hours; but they more frequently occurred simultaneously. After the first copious discharge, the patient experienced a distressing feeling of exhaustion and faintness, with ringing in the ears and giddiness. The subsequent discharges from the stomach, and those from the bowels, did not differ from each other in appearance, excepting as the matters ejected from the stomach were tinged by medicines or other ingesta: they were generally watery, colourless, and inodorous, and resembled in appearance barley-broth, or more frequently rice-water. Sometimes they were like milk, occasionally yellowish, grecnish, like muddy water or yeast; but the *conjee-stools*, as they are emphatically termed, which consisted of albuminous flakes floating in serum, or discharges of pure serum, were of the most frequent occurrence. The dejections sometimes took place without effort or uneasiness, but occasionally very forcibly, with simultaneous vomiting, spasm, and sinking of the pulse. This violent action of the alimentary canal was not of long continuance, the powers of the system being unable to support it: hence the vomiting and purging generally ceased some hours before death; but, in some cases, a discharge of serum took place from the rectum, on any movement of the body, till the fatal close. In most cases, some time after the commencement of this affection of the intestinal tube, but, in others, previously to it, spasmodic contractions of the muscles of the fingers and toes were felt; and these affections gradually extended along the limbs to the trunk. The spasms were imperfectly clonic or convulsive, with infrequent relaxations, were attended with great pain, and left, for some days afterwards, a degree of stiffness in the affected muscles. The pulse was from the first small, weak, and accelerated; and, after a certain interval, but especially on the accession of spasms or severe vomiting, it sank suddenly, so as to be speedily lost in the external parts. The length of time during which a patient lived in this pulseless state was remarkable. In a case related by doctor Kellett, the pulse was gone within three hours from the attack; yet the man lived twenty-two hours in that state. On the cessation of spasm and vomiting, and sometimes apparently from the exhibition of remedies, the pulse returned in the extremities for a short time, and again ceased. The skin was cold from the commencement of the disease, and, as it advanced, became gradually colder, and was covered either with a profuse sweat or a clammy moisture. The state of its circulation, and its insensibility were sometimes strongly denoted by the following circumstances: leeches would not draw blood from it; blisters and other vesicatories would not act; and even the mineral acids and boiling water produced no effect; and some patients were not even sensible of their application. In Europeans, the colour of the surface was often livid; the lips and nails presented a blue tint; and the skin of the feet and hands became corrugated, and exhibited a sodden appearance, as if from long immersion in hot water. With these symptoms coexisted violent pain of the intestines, with a sensation of writhing and twisting there; heartburn, which the sufferer compared to a fire consuming his entrails; excessive thirst; anxiety, with inexpressible uneasiness about the præcordia; hiccough; jactitation; and, notwithstanding the actual coldness of the surface, and even of internal parts which are accessible to the touch (the tongue for instance), a sense of heat which impelled the patient incessantly to throw off the bed-clothes. The breathing was much affected, being performed either more slowly than usual (sometimes, for instance, in the advanced stage, only at the rate of seven respirations in a minute), or the inspirations were short and sudden, with violent pain from spasm of the diaphragm; the voice being feeble, hol-

low, hoarse, and interrupted. The eyes were sunk in their orbits; the corneæ flaccid, the conjunctivæ frequently suffused with blood; the features of the face collapsed; and the whole countenance wore a cadaverous aspect. The secretions (those of the skin and intestines excepted) were generally suspended. The functions of the mind were undisturbed almost to the very last moment of existence. The approach of recovery was denoted by the rising of the pulse, the return of heat to the surface, inclination to natural sleep, diminution or cessation of vomiting, purging, and spasms, and, after an interval, the reappearance of bilious stools, urine, and saliva.* Regarding the above as a picture of the general type of a disease rather variable in character, we shall proceed to relate the more striking deviations from the ordinary form which were observed in India.† Instead of the exceedingly sunk state, there was a marked excitement, with a hot and dry skin, and a pulse of considerable force, in several instances throughout great part of the course of the disease.‡ This, in some cases, arose from the early exhibition of stimulants; but in others it appeared to be an essential part of the disorder. These cases yielded most certainly and readily to treatment; and hence many of them having been subdued without the occurrence of sinking or debility, it was a matter of doubt whether this description of disorder really belonged to the epidemic; but that it did so was placed beyond all question by some of the more protracted cases degenerating into the ordinary low form. The most fatal variety of the disease was denoted by the slightness of the commotion in the system: there was no vomiting; hardly any purging; perhaps there were only one or two stools, with no perceptible spasm; no pain of any kind; a mortal coldness, with arrest of the circulation coming on from the beginning, and the patient dying without a struggle within three or four hours. Several instances were heard of, at Hoobly and other places, of natives being struck with the disease whilst walking in the open air, and who, having fallen down, retched a little, complained of vertigo, deafness, and blindness, and expired in a few minutes. Mr Scott informs us that this most deadly form of the disease frequently manifested itself in local epidemic visitations, which were often observed in India, all the cases occurring at the same time in a given district partaking of the same peculiarity of character. The collapsed form of disease, first described, is that which has been most frequently observed. In fatal cases, its duration varies from four to eight hours; whilst in those which terminate favourably (a result often apparently due to early medical assistance), the patient may be restored to perfect convalescence in a period ranging from twenty-four to twenty-eight hours. But, in many cases, considerable disturbance of the system intervenes between the period of collapse and restoration to health; or this disturbance may itself cause death. The Indian reporters mention two forms of this disorder. In the one, with some excitement in the system, the bowels continue to discharge, for many days, first brown and watery, then dark, black, and pitchy stools, sometimes with blood, and with peculiar pains in the bowels, particularly in the rectum. The other, a distinct febrile form, we shall describe in the language of the Bengal Report:—"The fever, which almost invariably attended this second stage of the disease (in Europeans), partook much of the nature of the common bilious attacks of these latitudes. There was a hot, dry skin, a foul, deeply furred tongue, parched mouth, thirst, sick stomach, restlessness, watchfulness, and quick, variable pulse, sometimes with delirium and stupor, and other marked affections of the brain. Generally, when the disorder proved fatal in this stage, the tongue, from being cream-coloured, became brown, and sometimes black, hard, and more deeply furred; the teeth and lips were covered with sordes; the state of the skin varied, chills alternately with heats; the pulse became extremely quick, weak, and tremulous; hiccough, catching of the breath, great restlessness and deep moaning succeeded; and the patient soon sunk, incoherent and insensible, under the debilitating effects of low nervous fever, and frequent, dark, tarry, alvine discharges." A consecutive fever, similar to this, we learn from doctors Russell and Barry, is of more frequent occurrence in Russia than in India. The following description of it we owe to these gentlemen: "After the blue, cold period has lasted from twelve to twenty-four hours, seldom to forty-eight hours or upwards, the pulse and external heat begin gradually to return; headache is complained of, with noise in the ears; the tongue becomes more loaded, redder at the tip and edges, and also drier. High-coloured urine is passed with pain and in small quantities; the pupil is often dilated; soreness is felt on pressure over the liver, stomach, and belly; bleeding by the lancet or leeches is required. Ice to the head gives great relief. In short, the patient is labouring under a continued fever, not to be distinguished from ordinary fever. A profuse critical perspiration may come on from the second or third day, and leave the sufferer convalescent; but much more frequently the quickness of pulse and heat of skin continue; the tongue becomes brown and parched; the eyes are suffused and drowsy; there is a dull flush, with stupor and heaviness, about the countenance, much resembling typhus; dark sordes collect about the lips and teeth; sometimes the patient is pale, squalid, and low, with the pulse and heat below natural; but, with the typhus stupor, delirium supervenes, and death takes place from the fourth to the eighth day, or even later, in the very individual, too, whom the most assiduous attention had barely saved in the first or cold stage. To give a notion of the importance and danger of cholera fever, a most intelligent physician, doctor Reimer, of the merchant hospital, informs us, that of twenty cases treated under his own eye, who fell victims to the disease, seven died in the cold stage, and thirteen in the consecutive fever."* The same gentlemen state, as the result of their observations, that the following are the points of difference between the European epidemic and that of India:—"First, the evacuations, both upwards and downwards, seem to have been much more profuse and ungovernable in the Indian than in the present cholera, though the characters of the evacuations are precisely the same. Secondly, restoration to health from the cold stage, without passing through consecutive fever of any kind, was by far more frequent in India than here (St Petersburg); nor did the consecutive fever there assume a typhoid type.† Thirdly,

* Scott's Reports on the Epidemic Cholera; Anderson on Cholera (E. M. and S. Journal, vol. xv, p. 325); Christie on Cholera and the Pathology of Mucous Membranes; Annesley's Sketch of the Diseases of India, &c.

† For much that is valuable in this article, we are indebted to the Cyclopedia of Practical Medicine, Lon. 1832; the Englishman's Mag., No 1; and the Westmin. Review, No 30.

‡ Madras Reports p. 25

* Report of doctors Russell and Barry to C. C. Greville, esquire, published, among other papers, by authority of his majesty's most honourable privy council.

† If we compare the symptoms attributed to this consecutive fever by doctors Russell and Barry, with those quoted from the Bengal Reports, the difference between this stage of the respective epidemics does not appear very striking: the epithet *typhoid* seems almost equally applicable to both. Varieties were observed in the disease as it

the proportion of deaths in the cold stage, compared with those in the hot, was far greater in India, according to doctor Russell's experience, than here. Fourthly, the number of medical men and hospital attendants attacked with cholera during the present epidemic, in proportion to the whole employed, and to other classes of society, has been beyond all comparison greater here than in India under similar circumstances." Doctor Keir, of Moscow, gives the following description of the consecutive or secondary morbid state:—"A second ordeal now begins, sometimes as severe, and frequently not less fatal, though more slowly so, than the first: this is probably the effect of the morbid changes which have been induced during the first period of the disease. The appearance of the complaint is now entirely changed, insomuch that one who had not seen the patient during the first period, or been told of the symptoms, could not possibly know that he was suffering from the epidemic. I have observed the disease in this, its second period, to assume four forms: the first an inflammatory, or rather sub-inflammatory state of the stomach and bowels, most frequently the latter, sometimes conjoined; the second, inflammatory irritation of the lungs, with pain of the chest, cough, viscid expectoration and fever, appearing as a critical metastasis of the disease; the third, bilious or bilio-nervous fever, with suppuration of the parotid glands—in one case, with auxiliary suppurating bubo, towards the end of the fever, an inflammatory irritation of the lungs took place, ending in vomica; and the fourth, a congestive sub-inflammatory state of the brain and spinal chord. This last, as was natural to expect from the nature and seat of the affection, proved by far the most dangerous and most frequently fatal form of the second period: it appeared generally to supervene after the purging, vomiting, and cramps had been relieved, and the external heat in some degree restored; the patient complained of pain in the back, between the shoulder-blades, or in some other part of the spine, sometimes along its whole tract: he appeared sleepy to such a degree that at first I was disposed to attribute this state, in part at least, to the effects of the opium given in the first period. But I was soon convinced that the cause of this symptom, and of another strongly characteristic of this form of the disease, namely, the filling of the vessels of the sclerotica with red blood, was a congestive sub-inflammatory state of the brain and spinal chord. This striking symptom at first began to show itself in the inferior part of the globe of the eyes; it gradually increased, and, little by little, reached the upper part, while the eyes turned upwards, exposing the lower part gorged with blood. This state of the patient generally ended in a complete coma, and proved fatal a few hours afterwards." Besides the various and appalling symptoms which indicate general derangement of the action of the solids, there are appearances in the blood drawn during the collapsed stage, showing that the fluids feel the influence of this formidable disease. These appearances are very uniformly expressed by the terms *dark*, *black*, or *tarry*, in regard to colour, and by *thick*, *ropy*, *sirupy*, or *semi-coagulated*, in respect to consistence. This change in the condition of the circulating fluid is fully proved to be in the ratio of the duration of the disease; the blood at the commencement seeming to be nearly or altogether natural, and more or less rapidly assuming a morbid state as the malady advances. This condition was less conspicuous in cases of cholera ushered in by symptoms of excitement, than where the collapsed state of the system had occurred early; and in certain rare cases it was not observable at all, and the blood flowed readily from the vein; but the reverse was the fact, both with respect to its condition and the manner of its flowing from the arm, in an immense majority of instances. In general, after a certain quantity of dark, thick blood had been drawn, its colour became lighter, its consistence less thick, and the circulation revived such appearances always affording grounds for a proportionably favourable prognosis. There is some discrepancy in the accounts transmitted to us of the mode in which this diseased blood coagulates. In some instances, we learn, the coagulation is rapid, whilst in others it is slow and imperfect. Reporters are unanimous in declaring it deficient in serum, and destitute of the buffy coat. The latter is occasionally observed in cases attended with reaction, in which the blood is not black and thick.* The discharges from patients suffering under this disease were subjected to experiment by doctor Christie. The secretion consists of two substances, the one a transparent serous fluid, the other an opaque, white coagulum; the former perfectly soluble in cold water, the latter quite insoluble. These matters being submitted to the action of reagents, the fluid part was found to be pure serum, and the coagulated portion fibrin. The secretion, therefore, as the author remarks, has a composition similar to that of the blood deprived of its colouring matter; but the serum is in much larger proportion to the fibrin.

II. *Character of the Epidemic as it appeared in Britain.*—Were we to attempt a definition of epidemic cholera, as it appeared in Britain, the following, would comprise its distinctive symptoms:—After watery diarrhœa, or other generally slight indisposition, vomiting and purging of a white or colourless fluid, violent cramps, great prostration and collapse,† the last occurring simultaneously with the vomiting and cramps, or shortly after them. Should the patient survive the last train of symptoms, a state of excitement and fever supervenes. We can convey a correct idea of the disease only by dividing it into three stages, the *incipient*, the *cold* or *choleric*, and the *febrile*: the division accords with the character of the disease.

1. *Symptoms of the Incipient Stage.* In an immense majority of instances, diarrhœa was the prominent symptom of this stage. Languor and lassitude, and occasionally nausea and vertigo, coexisted with the disorder of the bowels, and sometimes certain of these symptoms may have appeared without it; but its occurrence was so common, that there were few cases in which it had not preceded the more formid-

prevailed in the different Indian presidencies, and likewise between that which existed in Hindostan and Ceylon, perhaps as considerable as those now observed by these intelligent physicians. In regard to what is stated in the extract referred to, relative to the greater frequency at Petersburg of the secondary "typhoid," or, as more commonly designated in India, "low biliary" symptoms, we confess that we observe a discrepancy when we read a subsequent part of the same Report, in which doctors Russell and Barry state, "Convalescence from cholera has been rapid and perfect here, as is proved by the following fact:—The minister of the interior had given orders that all convalescents, civil as well as military, at the general hospital, should be detained fourteen days. We inspected about two hundred of these *détênus* some days back, with Sir J. Wylie, and found them in excellent health, without a single morbid sequela."

* Madras Report, p. 30, &c.

† By *collapse*, in this definition, is meant the feebleness or almost the arrest of the circulation; the death-like appearance, the coldness, shrinking, and occasional blueness of the surface, which may in other diseases be observed after they have existed some time, and as the powers of life are passing away; but which occur, in what we shall call the cold or choleric stage of the epidemic, in a short time after its commencement, as though they formed an essential part of it. The degree and early accession of this collapse, and the white discharge, are the only distinctive marks that we are aware of between this stage of the epidemic and ordinary cholera.

able symptoms. On examining the discharges, shortly after the occurrence of the diarrhœa, they were observed to be fœcal and bilious; but they subsequently bore the serous character of those which occur after the choleric stage is fully formed: they were passed copiously and without much griping; while the feeling of debility which attends them was great. The natural tendency of this purging was to pass into the choleric stage; but the transition has frequently occurred shortly after some dietetic error, either as to quantity or quality of food, or after exposure to cold. The commencement of the purging sometimes preceded by several days the accession of the choleric stage, and occasionally only by eight or ten hours; but forty-eight hours was its mean duration, calculated from a great number of instances.

2. *Symptoms of the Cold or Choleric Stage.—First Period.* As in India, the attack in Britain, in a great majority of instances, generally commenced from two to four o'clock in the morning. The patient felt an uneasiness of the stomach, occasionally amounting to pain, to which speedily succeeded vomiting of the characteristic fluid described, and, if diarrhœa preceded, which, in almost all the cases occurred, a purging of the same fluid, the fœcal contents of the canal having been previously expelled. The vomiting was rarely full and effectual, consisting rather of apparently unsatisfactory retchings than of a full discharge of the contents of the stomach; but sometimes these contents were expelled forcibly, as if squirted from a large syringe. The discharges from the bowels were occasionally scanty, but much more frequently they took place copiously and forcibly. Simultaneously with the vomiting, or not unfrequently before this symptom occurred, cramps took place; and the agony which attended them constituted great part of the sufferings of the patient, who incessantly entreated that friction might be applied to the parts they affected. The pulse was feeble and frequent; the skin, in point of heat, below the healthy standard; the countenance shrunk, and, if not livid, pallid; and the respiration hurried, if not checked, as it frequently was, by spasm of the diaphragm and intercostal muscles. The circulation sunk remarkably, and sometimes appeared momentarily to cease, on every accession of severe vomiting or spasm.—*Second Period.* The mean duration of the preceding period varied from about eight to twelve hours; the vomiting and spasms then either totally subsided or recurred at much longer intervals, and the patient sunk into a state of extreme collapse. The pulse at the wrist was scarcely or not at all perceptible; the surface universally moist and cold, excepting as heat was imparted from without, for the instant that the hands or other parts were exposed, they became of an icy coldness; blueness, if it existed at all,—but it was by no means a uniform symptom,—was now conspicuous on the face and hands, which last had the shrunk and sodden appearance so generally described; the tongue was moist, and, if not actually cold, at least cooler than natural; and the voice of that mingled huskiness and feebleness which strikes the ear so peculiarly. In this condition there was little suffering, excepting from the sense of weight and oppression at the præcordia, of which the patient complained much; for even should spasms occur, they were now too feeble to excite much pain; the respiration was slow; the conjunctivæ, especially in their inferior hemisphere, were frequently injected with dark-coloured blood; and the insensibility of the stomach was so great, that the most powerful stimulants might be given and retained without the organ being apparently more sensible of their presence than if it were a lifeless pouch. The urine was suspended throughout the whole course of the choleric stage.

3. *Symptoms of the Febrile Stage.* The preceding stage, in most cases, made a very gradual transition into the febrile one. After the patient remained in the collapsed state, probably for a considerably longer time than the medical attendant expected, some degree of warmth was found returning to the surface and the pulse proportionably developed, being very perceptible at the wrist, generally about eighty, and soft; the vessels of the conjunctiva gradually became distended with blood; or if those of the inferior hemisphere were so during the stage of collapse, the distension now diffused itself over the whole membrane; the patient, who, on his attention being roused, was perfectly sensible, complained of severe pain in the head, of a sense of giddiness, and that the light distressed his eyes. The tongue in this early stage was clean and moist; the bowels were readily acted upon by medicine, and the discharges were feculent, and, though somewhat clayey, contained a proportion of bile; but the urinary secretion was sometimes either not restored, or was considerably deficient for a day or two after the establishment of fever. In the progress of the fever, the tongue became black, and sordes accumulated about the teeth; the eyes became more and more injected; the intellect more and more torpid, though still the patient could be roused to answer questions, and even to make one or two sensible remarks on his condition; but the instant the conversation ceased, the eyes were turned up in the orbit, exposing through the half-closed eyelids the red sclerotica, and the patient was in a state of profound stupor: the urinary secretion was now established, and the urine, which at first was dark-coloured and cloudy, was now limpid and pale; the alvine discharges were darker coloured than at first; and throughout the disease there was a deficiency of vascular action and of temperature. However flushed the countenance appeared,—and it was often very considerably so,—the temperature of the surface was below the healthy standard. *Typhoid* is not an inappropriate designation of the condition here described; but an individual who had once watched the progress of such a case, would run no risk of confounding it with typhus;—the deficiency of vascular and calorific power; the peculiar vascularity of the eye; the absence of subsultus and muttering delirium (for though delirium occasionally occurs during night, the condition of the intellect is throughout much more one of torpor than of irregularity), would be the marks by which he would discriminate the two affections. The duration of such a febrile stage was from a week to ten days. Its termination was, in a considerable majority of instances, fatal. In another form, and one which supervenes on a minor degree of collapse than the preceding, the symptoms do not differ from those described above, excepting that there are indications of greater excitement,—more warmth of surface, and more force and frequency of pulse. Depletion could be more freely practised, and it was altogether a more manageable form of disease. The mildest and most tractable type of the febrile stage was denoted by symptoms of general but moderate excitement, with epigastric pain on pressure, headache and giddiness; the tongue being at the same time either clean with a disposition to become dry and glazed, or slightly white and furred; the skin warm; the pulse free and forcible; the urine highly coloured, and the thirst considerable. In such a case there is little or no confusion of thought or delirium, and the eyes are not injected. We need scarcely remark that examples of this mild and tractable type of the febrile stage occurred after a choleric stage, in which the symptoms of collapse had been inconsiderable, in which the urinary secretion had not been suspended, or which had not always been attended with vomiting—a symptom occasionally wanting in slight cases.

4. *Prognosis.* The danger of the disease was, in all cases, to be estimated from the degree of collapse attending the cold or choleric stage. In India, it was remarked that the cases in which the spasms and vomiting were the most violent were by no means fraught with most peril, and the same held true in many instances in Britain. Whether we are to dread a fatal result in the cold or the excited stage, the intensity and duration of the collapse in the former of these stages, are the measure of the danger; for if the patient die in this stage, he dies of collapse; and if he survive it, and pass into the state of fever, the character of this fever is malignant and dangerous in proportion to the same collapse.

5. *Diagnosis.* From ordinary cholera the cold stage is to be distinguished, by the peculiar character of the discharges, and by the degree of collapse and its early occurrence. Cases have been adverted to, which, at least in the choleric stage, could not be discriminated from ordinary cholera, excepting, perhaps, from their taking place at a season of the year when ordinary cholera is never observed; but it may be remarked that no one would infer the existence of the epidemic from such cases, though he might be disposed to acknowledge that they belonged to it, if cases less equivocal were simultaneously prevalent, and especially if they originated under the circumstances mentioned in the preceding pages. Notice has been taken of sporadic cases which occurred in several parts of the kingdom. These cases were generally fatal as cases of cholera, and, probably on this account, attracted attention and were reported; and hence what we should consider the *experimentum crucis* by which their essential alliance to the epidemic, as it manifested itself in this country, or difference from it, can alone be proved,—the intervention, or otherwise, of fever, between the cold stage and recovery,—is necessarily wanting. We have been favoured, by a gentleman of high character and attainments,* with a report of two cases, regarded, at the time they occurred, as aggravated cases of the ordinary disease: both took place in the interior, under circumstances in which there was not the slightest ground to suspect contagion, and previously to there being any suspicion of the existence of the epidemic in this country. In one, the symptoms bore, unquestionably, a considerable resemblance to the choleric stage of the epidemic; but no fever supervened. The symptoms of the other shall be given in the words of the writer:—"The total, or nearly total suspension of the secretion by the kidneys; the watery vomiting and stools; the severity of the spasms; the shrunk and corrugated state of the skin on the hands and feet, and the blueness of his nails, persuade me that his disease was of the true spasmodic type. In him, moreover, a slow fever succeeded the original symptoms, and long retarded his recovery." We would not attempt to discriminate between such a case as this and examples of the epidemic, believing their character to be identical. This case occurred in the beginning of July, 1831. There is a certain form of the febrile stage,—that which supervenes on a choleric stage, attended with extreme collapse,—which the deficiency of the temperature and the circulation, the congested state of the conjunctiva from the very commencement of the fever, and the peculiar torpor of the intellect, would enable the observer to discriminate from any fever which we are in the habit of witnessing in this country, provided he saw the patient early and watched him throughout; but in the majority of instances, the diagnosis can only be correctly drawn by coupling the preceding history of the case with the existence of fever and with its character.

6. *Appearances presented on Dissection.* The external appearance of body closely resembles that which has been noticed during life: the solids are shrunk, the surface is livid, the skin of the hands and feet is corrugated, the nails are blue, and the fingers often rigidly contracted. There is no evidence of any unwonted tendency to putrefaction, nor any characteristic fœtor from the abdominal cavity. In the *head* are found marks of congestion, and even occasionally of extravasation. Such appearances were not of uniform occurrence in the dissections performed in Hindostan; but they were found very constantly in those made by Doctor Davy, in Ceylon; and Doctor Keir, of Moscow, discovered in the Russian disease the blood-vessels of the brain and its membranes more or less turgid with blood, particularly towards the base, with a fluid effused into its convolutions, and more or less of serum in the lateral ventricles. In the *thorax*, the pleura and pericardium are found, as the serous membranes generally are in this disease, perfectly healthy, with the exception, occasionally, of an unusual dryness. The lungs are sometimes in a natural state, but more frequently gorged with dark-coloured blood, so as to resemble liver or spleen; or they have been found collapsed on each side of the spine, leaving the thorax nearly empty. This latter appearance Doctor Pollock, of the fifty-third regiment, explained by supposing gas to be extricated within the cavity of the pleura; but the thorax having been opened in such cases under water, and no air having been found, Mr Scot is disposed to ascribe it to a contractile power exerted by the viscus, sufficient to overcome the atmospheric pressure. Both sides of the heart are in general distended with dark blood, and the bronchi are frequently filled with mucus. In the *abdomen*, the vessels of the liver are often much congested, and pour forth blood copiously when incisions are made into the organ; but this congestion is not uniformly found; the gall-bladder is turgid with black bile, and its ducts are sometimes constricted and impermeable, though occasionally in an opposite state. The peritoneum is often quite healthy, but the portion investing the alimentary canal has frequently an inflamed appearance from the exceedingly loaded state of its blood-vessels. This congestion is sometimes so great as to give the appearance of gangrene; but by drawing the finger over the surface, innumerable small veins may be found running in every direction, as in a preparation nicely injected, and the texture is found to be resisting and firm. This portion of the peritoneum, however, occasionally bears marks of actual inflammation, especially if the patient has lingered long before death. It then presents a thickened appearance externally, and its colour varies from a pale vermilion, through all the deeper shades, to a dark purplish hue; the former being chiefly remarkable on the surface of the duodenum and jejunum, the latter on the ileum, where it terminates in the cæcum. At other times, the whole alimentary tube, instead of this congested state, presents a blanched appearance both internally and externally. The omentum is sometimes healthy; at others, it presents the same appearance of extreme vascularity as the peritoneal surface of the alimentary canal. The following appearances are discovered on laying open the stomach and intestinal tube. A white, opaque, and viscid substance is found adhering to the surface of some portions of the mucous membrane; and in many cases it is so abundant in the intestines as completely to fill parts of them of a greater or less extent. The stomach and portions of the intestine are filled with a transparent or turbid serous fluid, and frequently the viscid matter men-

* Doctor Fenwick, of Durham.

tioned above is found intimately mixed with the serous fluid, or floating in it in the form of flakes. The mucous membrane, except when inflamed, which it not unfrequently is, has an unnatural whiteness, is often soft and pulpy, and in general—especially in the stomach and small intestines—can be easily detached by scraping, in the form of a thick pulp, from the subjacent coat. These appearances are sometimes more or less partial; but some of them are generally found throughout the whole extent of the tube. They extend, in some cases, to the mucous membrane of the bladder and ureters, and have been found, in two or three instances, in that lining the bronchi. In one case only in India was the state of the spinal marrow examined; and in that, strong indications of inflammation were detected in its sheath: the case, however, was in some degree a mixed one. But Doctor Keir found, at Moscow, the blood-vessels of the vertebral column and spinal chord more or less loaded with blood, which was sometimes effused between its arachnoid and dura mater; partial softening of the substance of the spinal chord was sometimes met with, and marks of inflammatory congestion in the larger nerves were detected.* The dissections performed in Britain generally furnished results corresponding with those obtained elsewhere. In the *head*, venous congestion of the brain and its membranes has been the most uniform and prominent appearance. Serum has been found in the ventricles of the brain and at its base; but in many cases this has been in small quantity, not exceeding that frequently observed after diseases in which no affection of the encephalon was supposed to exist. In some cases, especially those in which death took place in a protracted stage, but occasionally in a rapid disease, fibrinous depositions existed between the membranes. In the *thorax*, the lungs have uniformly been found more or less gorged with blood, though in many cases the engorgement was in the posterior part, and probably resulted from position. These organs were generally crepitating, and free from structural change. Softness or flabbiness of the heart has been noticed in several instances, and both its cavities, and the venæ cavæ and coronary vein, have been distended with dark-coloured blood. In the *abdomen*, the liver has been found gorged; but occasionally its condition was natural. The gall-bladder was generally distended, and the ducts were constricted, so that the viscus could not be emptied by pressure; but in some cases they were pervious. The abdominal veins have been found generally distended; but in several instances, the vena portæ and meseraic veins have constituted an exception to this rule, having been found empty. Vascularity and pulpiness of the mucous lining of the stomach have been frequently noticed; but the former has often been slight in degree, and observers have felt disposed occasionally to attribute it to the exhibition of mustard or other stimulants; whilst the latter has by no means been invariably found. The lining of the intestines has been found in many parts vascular and pulpy; but these appearances are not invariable, both lesions having been found wanting, and the pulpiness more frequently than the vascularity. The peculiar secretion has generally been found in the intestines. The kidneys have been observed to partake of the general congestion of the venous system. The bladder has generally been found contracted, and either empty, or containing a small quantity of urine. No softening or other disease of the spinal marrow, a little venous congestion excepted, was discovered in the examinations of this organ made here.

7. *Nature of the Disease.* Many writers of great talent have endeavoured to trace all the phenomena of the choleric stage, to a change in one part of the system. But there is little accordance among medical reasoners as to the part of the body in which the phenomena of the disease are presumed to originate; for the nervous system generally, the ganglionic portion of it exclusively, the blood itself, and the lining of the digestive canal, have each found advocates equal in ability to plead their cause.* The diversity of these views is a proof of the intricacy of the subject; and probably, also, since they have all emanated from observing and ingenious men, an evidence of the variable nature of the disease; each reasoner being, perhaps, influenced by that portion of the general phenomena of the epidemic which predominated in the cases it was his lot most frequently to witness. Their partial nature, too, may be in a considerable degree ascribed to the unfortunate influence of the expression *proximate cause*, as a substitute for the more comprehensive term *essence* or *nature of the disease*, on medical reasoning. Even those who affect to use it as an equivalent term for *nature of the disease*, are yet insensibly influenced by the words they employ. Amidst the crowd of phenomena presented to their notice in certain maladies, they often assume, on very insufficient grounds, that some one fact is the original of all others; and this they invest with the title of *proximate cause*. If the facts related respecting epidemic cholera are compared with the explanations offered of them, it will be found that each medical reasoner has attributed the commencement of the phenomena of the disease to an affection of some part of the frame, which affection unquestionably exists in a very great number of instances, but neither with that uniformity nor with that priority of time which can warrant us in concluding that it was the cause of all the other symptoms. It seems a rational supposition that the remote cause of a disease may act, in some instances, first on one, in others on another part of the system, from some local weakness or peculiarity of individual constitution, or from some specialty in the mode of application of the cause; and yet that the disease shall retain in each case such a resemblance to a common type as shall prove its identity. It is likewise supposable that the remote cause may make a simultaneous attack on more than one organ or part of the system. Complex diseases, such as fever, appear to furnish examples of both these cases. The real philosophy of medicine seems to consist in ascertaining the actual state of the system of which symptoms are the signs; and if we can proceed, through the medium of these signs and *post mortem* appearances, to one sole change in one organ, the treatment is simplified, and science and art are gainers. But there are diseases—and this seems to be one of them—in which we meet with a variety and complexity of pathological conditions, all of importance, and all to be kept in view in their treatment. It is true that, of these conditions, some may arise from others, according to known physiological laws, as dark-coloured blood from impeded respiration, and it is right thus to explain them when possible; but the uniform endeavour to trace all to one primary change, or rather, as is more frequently done, to assume one change to be primary, and all other morbid states to be but emanations from it, is not only unphilosophical, but is too apt to tinge our practice with undue partiality. Whilst we deem that no one writer has

* Madras Reports, pp. 32, 34. Anderson on Cholera Morbus (Edinburgh Medical and Surgical Journal, vol. xv.). Christie on Cholera (p. 47). Annesley, Diseases of India [2d edit., p. 106 et seq.]. Account of the Appearances after Death, observed at Moscow, drawn up by Doctor Keir.

* These are doctor Kennedy and Mr Orton for the first, Mr Bell for the second, Mr Annesley and others for the third, and Mr Christie, with Roche and other French writers, for the last.

attained, either by inferences drawn from symptoms, appearances after death, or both, a knowledge of the affection of any one organ in cholera which can be properly termed a proximate cause whence all the other phenomena arise; or acquired precise ideas respecting the nature of the affection of many organs which manifestly participate in the disorder; it is gratifying to acknowledge that their labours have thrown much light on the condition of many parts, and that very great practical good has resulted from the information thus obtained. That the nervous system generally, and especially the ganglionic and spinal nerves, and the spinal medulla itself, are affected, is manifest from many symptoms; but whether this affection arises from a direct impression of the remote cause of the disease on these organs, or from irritation propagated from the alimentary canal along the ganglionic nerves to the spine, we are ignorant. Doctor Keir's able researches have shown that, in some fatal cases, inflammation of a portion of this system has existed; but its precise pathological condition in cases which terminate favourably, remains yet to be ascertained; and it must be remarked, too, that, in fatal cases, this inflammation has not been always detected. The state of the sanguiferous system is very remarkable; but here, too, we must feel some doubt whether the feebleness or almost complete arrest of the heart's action is a primary effect of the cause of the disease, or, as suggested by Mr Bell, arises from the affection of the ganglionic system; or, again, whether it results, through the medium of this system, from the condition of the alimentary canal. Is the dark appearance of the blood to be explained by the feebleness of the action of the right ventricle, as a consequence of which but little blood is transmitted through the lungs and exposed to the influence of the air? According to this view, which is suggested with diffidence, the imperfection of the respiratory process will arise from the same cause as in congenital malformation of the heart, such as the persistence after birth of the foramen ovale or the aorta arising from both ventricles, in which a very small proportion of the whole mass of blood is oxidized. This hypothesis explains readily the dark appearance of the blood, its accumulation in the great veins of the viscera, the coldness and lividity of the skin, and the imperfection of the respiratory process, which has been so ably illustrated by Doctor Davy. This gentleman was the first to show that the air expired by patients in the choleric stage is colder, and contains less than the usual proportion of carbonic acid; and that this is the case even when the breathing is full, free, and rapid. The explanation offered is confirmed by an observation of Mr Ellis, in his experiments on respiration, that "as the circulation declined, so likewise did the emission of carbon, and, consequently, the production of carbonic acid." The thickened consistence of the blood receives a ready explanation from the loss of its serous part by the abundant discharge from the inner intestinal surface. There are two morbid conditions of the lining of the digestive canal. In one it is in a state of manifest inflammation; in the other it is white and pulpy, and easily detached from the subjacent coat. Is this latter condition the result of a disorganizing inflammation which has itself passed away? or must we be content to describe the action which has produced it by the very unsatisfactory and vague expression, disturbance of the function of nutrition? This is a question rather of general pathology than one connected solely with this disease; but it is one as yet undecided. The affection of the alimentary canal is essential and primary, if any part of the disease is so; and it were vain to attempt to trace it to a morbid condition of any other organ or system of organs. The general suspension of secretion, which is complete only when the collapse is extreme, appears to result from the disorder of those systems, the nervous and vascular, on which this important function depends. The apparent anomaly presented by the continuance of the cutaneous and intestinal discharges amidst the general suspension of secretion, is well explained by Mr Bell's distinction between this function and exudation or exhalation.* That the whole series of phenomena results from the action of a morbific poison on the body, there can be no doubt; but as yet, as in the case of fevers, we are ignorant of the precise nature of the primary change effected by it in various organs or systems; and it is to be feared that till more accurate ideas are attained respecting the pathology of fever in general, this ignorance will remain. In the febrile stage, we would remark, there are indications by no means equivocal of inflammatory affection of the brain, and occasionally of other organs, the analogy to fevers in general being in this respect preserved. Were we to judge solely from what we have ourselves observed of the commencement of the disease, we should consider the alimentary canal to be the part of the frame which first felt the influence of the poison; but we should consider the condition of the nervous and vascular systems much too intense in degree to be merely sympathetic of the state of the stomach and bowels. Many cases, moreover, reported from abroad, particularly from India, lead to the opinion that in various instances the nervous system is primarily affected.

8. *Proportionate Mortality.* The mortality during the early prevalence of the epidemic in India in 1817 and 1818 was very great; but, either from the abatement of the intensity of the disease, or from the improvement of the method of treatment adopted by our medical men, or, as is more probable, from the co-operation of both these circumstances, it was subsequently very much reduced. There is no disease in which unassisted nature seems more powerless than this. We learn from the report to the medical board at Bombay, that there is reason to believe that, of 1294 cases which received no medical assistance, every individual perished; and it is added, that it is not ascertained that any case has recovered in which medicine had not been administered. From this appalling statement, it is gratifying to humanity to turn to the following records. According to the documents collected by the Madras medical board, the number of deaths caused by it in the army of that presidency during 1818 and the four subsequent years, was 4430, of which 695 occurred among the European troops, and 3735 among the sepoys. The number attacked was 19,494, namely, 1664 Europeans and 15,830 natives. The average strength of the army during the period included in the reports being 10,112 Europeans and 73,254 natives, it follows that in five years, 23½ per cent. of the troops were attacked, and that of these 22⅜ per cent. were carried off, or 5¼ per cent. of the whole force of the army. This statement, though sufficiently distressing, is still a proud monument to the skill of the medical men employed, and to medical science, in general. We hear, in different situations, of rates of mortality infinitely lower than this. Doctor Burrell, surgeon of the sixty-fifth regiment, reports, for instance, from Seroor, that out of sixty cases he lost four, being at the rate of 6.6 per cent.; whilst Mr Crow, at the same station, makes the mortality much less, declaring that the disease is not fatal in more than one in a hundred of those who are early succoured. Doctor Burrell found, too, that of a certain description of cases, those attended with violent spasms, he saved eighty-eight

* Treatise on Cholera Asphyxia, pp. 56, 57.

out of ninety.* In taking these estimates into consideration, we must always recollect, however, that, in epidemics, there is often a very wide difference in the gravity of the disease at different points or in different years,—indeed, sometimes at nearly the same point and in the same year; so that, when we hear of an extremely small loss in proportion to the number attacked, long experience does not permit us to doubt that in such a case the type of the disease has been very mild. The ravages of the disease in civil life, amid a comparatively unorganized population, where prompt assistance could not always be rendered to the sufferers, furnish a considerable contrast to this statement from the British army, and strongly confirm the opinion expressed of the importance of early treatment in a malady so rapid in its course, and in which the efforts of nature are so impotent. At Bushire, in the Persian gulf, we learn from Moreau de Jonnés, that in 1821 a sixth part of the inhabitants perished; and at Bassora, in the same year, Mr Rich informs us that eighteen thousand died, of whom fourteen thousand perished within a fortnight. The number attacked in Moscow from September, 1830, to January of the following year was, 8130, of which perished 4385, or fifty-four per cent.† In the small town of Redislscheft, of eight hundred sick, we learn from Doctor Reimann, that seven hundred died in one week. The greatest success which has attended the treatment of the disease in the Russian empire, occurred in the district of Orenburg, the number attacked being 3590, of whom 865 perished, or about twenty-four and one-tenth per cent., a result creditable to the vigilance of the Russian government, and to the skill and care of the medical men employed. The treatment adopted was that of bleeding, calomel, opium, warmth, and friction.‡ In Scotland about one-half or one-third of those attacked perished, and nearly the same was the case in England. In Ireland the mortality was small compared to the number of cases reported.

9. *Treatment.* While the cholera was only partially known in Britain, and while yet the medical practitioners of this country were inexperienced regarding it, violent differences of opinions existed as to its contagious or non-contagious nature. The disputes on this subject, however, have now nearly subsided, and the great majority of medical men are now persuaded, that the disease is epidemic, and not contagious, in its character. No specific as to its treatment has hitherto been discovered; although the alleged remedies laid before the public have been numerous and varied. Without entering into the multifarious receipts of different practitioners, we shall here confine ourselves to the mode of treatment adopted by Dr Henry M'Cormac in the Belfast hospital, as being among the most successful that has come under our observation,—the mortality in that hospital having kept below twenty-five in every 100 cases. It may be stated, at the same time, that the treatment here adopted differed not in its essential characteristics from that recommended by many eminent physicians.

"In the great majority of instances," says Dr M'Cormac in his pamphlet on cholera (London, 1832), "cholera commences with purging—first, the fæcal matters contained in the intestinal canal are quickly discharged—then, a clear, yellowish fluid, interspersed with flocculi, resembling pale whey, or rice water, is profusely passed afterwards. Vomiting will begin along with the purging or subsequently—first, the contents of the stomach are cast off, and then, a fluid precisely the same as that discharged from the intestines, comes away afterwards. In a few rare cases, either vomiting or purging, or both, will be absent; in this case, there will be great sickness, præcordial oppression, cramps, and if the disease be not arrested, collapse and death. The cramps generally come on when the vomiting and purging have existed for some time—frequently, they commence all three together. After a time, the purging and vomiting will cease, whether medicine be given or not, the system becoming exhausted, and the blood being drained of its serum; the cramps also cease in the same manner. Shortly after these disappear spontaneously, the blood ceases to circulate on the surface and in the extremities—cold sweats bedew the skin—a mortal coldness invades the frame, and death soon closes the scene. This is the common, but not the universal order in which the symptoms proceed.

"It is of the utmost importance to arrest the purging and vomiting with the least delay; for the fluid discharges are the serum of the blood, and cause weakness and death, as if the blood itself were drawn away. I have often seen a patient pass, in a very short time, a gallon or more of this fluid, which, not long before, was circulating as part of the living blood. This discharge will not cease of itself; it continues till it brings the patient to the verge of death. It is almost the same, as if so much blood streamed from open wounds. I never knew a case in which an individual attacked with cholera morbus, grew spontaneously well—the diarrhœa always appears to go on to the production of collapse and death, unless medical aid be interposed. The reader will then see the necessity of losing no time; and he will not, therefore, wonder when I tell him, that I do not wait till the discharges and the cramps have made the patient cold and blue, but commence without the loss of a moment, to give the most powerful medicines. These medicines, powerful as they are, cannot be productive of the least injury; but neglected or inefficiently treated cholera, surely leads to death. The following is the mode of treatment which I follow, specifically laid down:—

"If a person between ten and sixty, whether male or female, not much broken down or previously debilitated, be seized with the disease, whether with purging and vomiting, or purging, vomiting, and cramps I immediately take away from the arm, if the pulse be not weak and thready, from ten to thirty ounces of blood, the quantity being regulated by the strength of the individual and the effects produced. To a man or strong woman, I give, while the arm is tying up, a scruple of calomel, with two grains of opium, both in powder, and washed down with a mixture of some diluted ardent spirits, as gin, whiskey, or brandy united with from forty to sixty drops of laudanum. To an ordinary woman or weak man, I administer half this dose; to a child the quarter, and to an infant the eighth part. If the medicine be thrown off in whole or in part, the whole or a part of the same dose, as it may appear, must be immediately repeated. In two or four hours, or every four hours, the medicine must be repeated, if the symptoms are not subdued. In this case, general directions alone can be given: the whole dose may be given again, the half only, or the fourth part, according to the urgency of the disease; in general, however, I find five grains of calomel, and one grain of opium, sufficient. In this, as in many other particulars, the practitioner must use his own discretion. If the complaint be early treated, it will generally be checked after the first or second dose—very frequently a single dose extinguishes it at once. Time after time, patients have been brought in with almost incessant purging, vomit-

* Bombay Reports, p. 68, &c.

† Memoir of doctor Loder, physician to the emperor at St Petersburg, dated January. 1831, and read at the academy of medicine at Paris.

‡ Substance of a report published by the supreme medical board of Russia.

ing, and cramps; yet hardly have they been bled and swallowed their medicine, when all these symptoms vanished, sleep came on, and the patients have awakened after some hours, weak but well. In most instances, however, the medicines require to be repeated. Sometimes the symptoms will continue in a much diminished form; at others, the disease will make efforts to reappear, after the stimulus has been exhausted. In both cases, the repetition of the medicine will produce the desired results.

"In some very weak, aged, or broken down persons, the system has rallied for a moment, and then sunk; in this last case, medicine ceases to be of use —nature is exhausted—the leverage of life is broken. We must never, however, presume this to be the case, beforehand, but continue our efforts, till death itself bid us cease. Some constitutions appear so irritable, that the vomiting will continue for days with intermissions, causing much annoyance to the poor patient. In these cases, I find mustard sinapisms or blisters, applied to the stomach, and occasionally warm baths, opium in some form, and a little wine negus at intervals, with some soup or tea, having bread sopped in it, sufficient for its suppression. Some patients complain much of a difficulty in making water. These will require, in many cases, the use of the catheter, abdominal frictions, stupes and warm baths: mild opiates will generally be necessary in addition. With these remedies, this troublesome affection commonly ceases in a few days. Sometimes the mercury will affect the mouth. In this case, port-wine gargles, the warm bath, careful nourishment, and opiates, will soon cause this symptom to disappear. Every patient has invariably recovered, whose mouth has been affected; and although I never try to produce this result of mercury, as some practitioners recommend, I do not find the recovery in the least retarded by it. Such a trifling and occasional inconvenience in the employment of so admirable a remedy, when the result is the salvation of human life, and a complete victory over a formidable and malignant disease, is not to be regarded for a moment. The patients will sometimes be troubled with griping pains in the stomach and intestines, during their convalescence; but wine and opium, and now and then a warm bath, quickly disperse them. If the bowels should prove costive, from ten to thirty grains of the compound powder of jalap may be given, or from half an ounce to an ounce of castor oil, with an ounce of peppermint-water and twenty drops of laudanum. Sometimes I make the attendants administer a simple enema or injection of gruel with or without castor oil; for I have more than once seen the use of purgatives bring back the serous purging of the complaint, to the great danger and prejudice of the patient. Indeed, during the prevalence of cholera, purgatives should be very carefully dealt with, when it is necessary to use them. They are almost always improper, when purging actually exists—as for common salts and other saline purgatives, they should not be touched. In two fatal cases, which occurred in private practice, castor oil in the one case, and castor oil and salts in the other, were most improperly taken by the patients, when they felt the disease coming on them. And I may here be permitted to remark, that very many lives indeed, might be saved, by people calling in instant advice, when affected with unusual purging, whether during night or day.

"I never found it of any use to bleed the patients in collapse, even so far as it is practicable to do so. The patient in most instances is cold, and requires to be heated with the warm-air bath, a simple contrivance, consisting of a few half hoops, the end ones of iron, stayed together by longitudinal braces. A solid piece of wood is adapted to one end, pierced with a hole, through which a curved tin tube, four inches in diameter, proceeds, and which serves to transmit the heated current of air, impelled upwards by the flame of some spirits of wine, held in a tin cup, supported by a rod on which it slides. By the use of this apparatus, the patient may be well heated in from ten to twenty minutes. The same object, however, is readily effected by bladders or bottles filled with warm water—pillow-cases, containing each a few pounds of hot salt—or hot bricks wrapped up in flannel or other cloths. The heat of the bottles may be tempered in the same manner. As soon as the process for heating is put in operation, the patient must receive a scruple of calomel, two grains of opium, and a drachm of laudanum, mixed with spirits and hot water; an injection, composed of half a pint of starch or gruel at blood heat, and containing a drachm of laudanum, is to be given at the same time. Men and women may commonly receive these doses; but they must be lessened for weak persons and children, as already stated. When the patient's body is well heated, let it be carefully rubbed, using, if at hand the following liniment, which is also proper during the cramps, viz.:

> Common spirits, a pint;
> Tincture of Spanish flies, two drachms;
> Camphor, two drachms;
> Strong vinegar, or water of ammonia, an ounce
> Spirits of turpentine, two ounces. Mix.

I do not, however, place very much confidence in hand-rubbing, and still less in the liniment in question: the other medicines are matters of much more importance; but, if there be plenty of help, it is as well not to omit either. Let mouthfuls of mulled wine negus, white-wine whey, or good punch, be given at intervals, during the collapse. If, after four hours, the pulse and heat have not returned, let ten or twenty grains of calomel, and a proportionate quantity of opium, and the opiate injection, be repeated; and every four hours afterwards, five grains of calomel and a grain of opium, so long as life remains or till the patient recover. If, however, the extremities continue cold and blue, and the nose, tongue and chin keep cold likewise—if the patient try to keep his hands constantly out of the clothes, and fall into a dull, nearly insensible state, from which it is difficult to rouse him, little hope can be entertained of his recovery. But, as I have said before, we should never relax using all our efforts while life remains. In fatal collapse, the system continues insensible to the action of the strongest stimuli, in what ever quantities—it seems, indeed, to make no difference whether they are given or not. The young and comparatively vigorous, are, in general, most apt to recover from collapse. Collapse will sometimes set in before the pulse is extinguished; and, with the better classes, the pulse will often continue to the last, in a very subdued state, however. We must be as careful not to overdose as to underdose; but the preceding directions are, I think, sufficiently explicit on this point: they contain the substance of my own practice; and in no instance have I had reason to suppose that I had exceeded in this respect, although the contrary was at first the case. If the patient recover from collapse, the pulse will begin to beat freely—a natural heat will return to the surface—the eye will grow bright—the patient will become cheerful, and talk—the natural dejections will be resumed—a warm perspiration will flow over the surface, and there will be a craving for food. The constitution, however, will sometimes rally for a moment —the pulse will return; but in a short time, the awakened powers die away, in spite of every effort, and the prostration becomes complete. Even when the hopes of a perfect recovery may be safely indulged in, constant caution must never cease for a mo-

ment; I have seen apparently slight imprudence in exposure, diet, or exertion, bring on a relapse more than once, ending in two instances fatally. But the best way to manage with regard to collapse, is to prevent any one from falling into it; and I have the best reasons for knowing that the treatment already laid down, will, in almost every case, not only prevent collapse, but certainly cure the disease, when taken in an early stage. The exceptions have been already pointed out, but early treatment affords the best chance; and I have seen many cases wherein nothing but the earliest and most energetic treatment could have saved the patient's life.

"The diet, during convalescence from cholera, must be of a light, nourishing nature; by degrees, the patient will be able to digest strong food. At first, a little arrow root, rice milk, panado, or bread sopped in tea, weak soups and bread, will be best; after a few days, the patient will be able to take a little meat. The strength must be kept up with moderate portions of wine or punch. Some patients will recover their strength almost immediately; others will be days, and even weeks, in getting round. In general, however, when the disease is early and properly treated, and the subject of ordinary strength, the recovery is very prompt. If secondary fever should supervene, which is more frequently the case after collapse, the treatment is the same as that followed in ordinary fevers, the principal indication in general being to keep up the strength with wine and other stimuli."

CHOLESTERIC ACID; a French name for the acid formed by the union of nitric acid and the fat matter of the human biliary calculi.

CHOLESTERINE. See *Calculus*.

CHOLIAMB (Greek, χωλίαμβος, the lame iambus; also called *skazon*, from σκάζω, to halt; or *versus Hipponacticus*, because the satirist Hipponax of Ephesus made use of it, or perhaps invented it). The choliambus is an iambic trimeter, the last foot of which, instead of being an iambus, is a trochee or spondee, which gives it a lame motion, as, for instance, Martial l, i. epig. 3:—

Cur in theatrum, Cato severe, venisti?
An ideo tantum veneras, ut exires?

We perceive, from the construction of the choliambus, that it may be applied with advantage to produce a comic effect. The Germans have happily imitated this verse, as well as all other ancient metres. An instance of a German choliambus is—

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Der Choliambe scheint ein Vers fur Kunstrichter.

CHOLULA; a town of Mexico, in Puebla; sixty miles E. of Mexico; lat. 19° 2′ N.; lon. 98° 8′ W.; population 16,000. It was formerly a city of Anahuac, containing, in the time of Cortes, according to his account, 40,000 houses, independent of the adjoining villages or suburbs, which he computed at as many more. Its commerce consisted in manufactures of cotton, gems, and plates of clay; and it was much famed for its jewellers and potters. With respect to religion, it may be said that Cholula was the Rome of Anahuac. The surprising multitude of temples, of which Cortes mentions that he counted more than 400, and, in particular, the great temple erected upon an artificial mountain, which is still existing, drew together innumerable pilgrims. This temple, which is the most ancient and celebrated of all the Mexican religious monuments, is 164 feet in perpendicular height, and, at the base, it measures, on each side, 1450 feet. It has four stories of equal height, and, appears to have been constructed exactly in the direction of the four cardinal points. It is built in alternate layers of clay and bricks, and is supposed to have been used both as a temple and a tomb.

CHORAL (derived from *chorus*); a term applied to vocal music, consisting of a combination of different melodies, and intended to be performed by a plurality of singers to each part; as *choral anthem, choral service*. In Germany, this term is applied to the music of hymns, in the composition of which the Germans are so much distinguished.

CHORD (from the Greek χορδή, an intestine), in modern music; a combination of two or more sounds according to the laws of harmony. The word *chord* is often used in counterpoint; as *fundamental chord, accidental, anomalous*, or *equi-vocal, transient chord*.

CHOREGRAPHY; an invention of modern times, the art of representing dancing by signs, as singing is represented by notes. It points out the part to be performed by every dancer—the various motions which belong to the various parts of the music, the position of the feet, the arms, and the body, &c. The degree of swiftness with which every motion is to be performed may be thus indicated, by which all becomes as intelligible to the dancer, as a piece of music to the musician. Drawings to assist the tactician, by designating the position, motion, and evolutions of troops, have also been called *choregraphical drawings*.

CHORIAMBUS, in metre; a foot compounded of a trochee and an iambus. See *Rhythm*.

CHOROGRAPHY; the description of a single district, in contradistinction to *geography* (the description of the earth). The art of drawing maps of particular districts is also called *chorography*.

CHORUS, in the drama. This was, originally, a troop of singers and dancers, intended to heighten the pomp and solemnity of festivals. This, without doubt, was at first the purpose of tragedy and comedy, of which the chorus was originally the chief part, in fact, the basis. In the sequel, it is true, the chorus became only an accessory part. During the most flourishing period of Attic tragedy, the chorus was a troop of male and female personages, who, during the whole representation, were bystanders or spectators of the action, never quitting the stage. In the intervals of the action, the chorus chanted songs, which related to the subject of the performance, and were intended either to augment the impression, or to express the feeling of the audience on the course of the action. Sometimes it even took part in the performance, by observations on the conduct of the personages, by advice, consolation, exhortation, or dissuasion. It usually represented a part, generally the oldest portion of the people, where the action happened, sometimes the counsellors of the king, &c. The chorus was an indispensable part of the representation. In the beginning, it consisted of a great number of persons, sometimes as many as fifty; but the number was afterwards limited to fifteen. The exhibition of a chorus was in Athens an honourable civil charge, and was called *choragy*. The leader or chief of a chorus was called *coryphæus*, who spoke in the name of the rest, when the chorus participated in the action. Sometimes the chorus was divided into two parts, who sung alternately. The divisions of the chorus were not stationary, but moved from one side of the stage to the other; from which circumstance the names of the portions of verse which they recited, *strophe, antistrophe*, and *epode*, are derived. But it cannot be determined in what manner the chorus sung. It is probable that it was in a sort of solemn recitative, and that their melodies, if we may call them so, consisted in unisons and octaves, and were very simple. They were also accompanied by instruments, perhaps flutes. With the decline of ancient tragedy, the chorus was omitted. Some trage-

dians of the present age, of whom Schiller was the first (see his prologue to the *Bride of Messina*) have attempted to revive the ancient chorus.

Chorus, in music, in its general sense, denotes a composition of two, three, four, or more parts, each of which is intended to be sung by a plurality of voices. It is applied, also, to the performers who sing those parts. These choruses are adapted to express the joy, admiration, grief, adoration, &c., of a multitude, and sometimes produce much effect, but are very difficult for the composer.

CHOSROES I., king of Persia, succeeded to the throne in 531. His memory is still venerated in the East, and his virtues obtained him the titles of the *Magnanimous* and the *Just*. At his accession to the crown, Persia was involved in a war with Justinian, to whom Chosroes granted a perpetual peace, on the payment of a large sum of money. But, in 540, Chosroes invaded Syria, laid Antioch in ashes, and returned home laden with spoils. After several other victorious expeditions, he invaded India and Arabia, renewed the war with Justin, the successor of Justinian, whom he compelled to solicit a truce, but was, soon after, driven back across the Euphrates by Tiberius, the new emperor, and the Romans took up their winter quarters in the Persian provinces. Chosroes died in 579. His love of justice sometimes led him to acts of cruelty; but he encouraged the arts, founded academies, and made a considerable proficiency in philosophy himself. His reputation obtained him a visit from seven sages of Greece, who still adhered to the pagan religion; and, in a treaty with Justinian, he required that they should be exempt from the penalties enacted against those who continued to favour paganism. Persian historians ascribe to him the completion of the great wall of Jabouge and Magogue, extending from Derbent along the Persian frontiers.

CHOSROES II., grandson to the preceding, ascended the throne in 590, and carried his arms into Judea, Libya, and Egypt, and made himself master of Carthage. In 617, he reduced Heraclius, the Roman emperor, to solicit a peace, which he refused to grant, except on condition of his renouncing the crucified God, and worshipping the sun. Heraclius, deriving courage from despair, penetrated into the Persian empire, and pillaged and burned the palace of Chosroes, who was dethroned by his own son, and cast into prison, after witnessing the massacre of eighteen of his sons, and suffering every indignity. His sufferings were terminated by his death, in 628.

CHOUANS, in the French revolution; the insurgents on the right and left banks of the Loire. The name was properly applied to the royalists on the right bank of the Loire, in Bretagne, Anjou, and Maine. The principal theatre of the war formed nearly a square, the angles of which are the cities of Nantes, Angers, Mayenne, and Rennes; but the excursions sometimes extended to the coast, to the city of L'Orient. The origin of the word *Chouans* is not known. Some derive it from the name of the sons of a blacksmith, who first excited the insurrection in that quarter; others from a corruption of the word *chathuant* (screech-owl). According to the latter, there was a horde of smugglers, who, before the revolution, secretly exported salt from Bretagne into the neighbouring provinces, and whose signal was the cry of the screech-owl. The revolution broke up the trade of these men, most of whom had no other resource. Accustomed to a vagabond life, they wandered through the country, committing depredations, and were gradually joined by others of a similar character. At first, murder and pillage were the chief objects of these wretches, but they afterwards united with the Vendeans (see *Vendée*) in defence of monarchy and religion, and shared their fate. Since the return of Louis XVIII., several of the chiefs of the Chouans have been honourably rewarded for their former services.

CHOUGH, or CHOUCH (*choucas*, French); the trivial name of a species of crow (*corvus monedula*, L.). It is about the size of a pigeon, and has a sharp cry; is nearly omnivorous, except that it does not feed upon carrion; is of a dark ash colour about the neck and under the belly, though frequently entirely black. The choughs live together in large flocks, and make their nests in steeples, old towers, or in large and lofty trees. Their manners are very similar to those of the rooks, with which they are sometimes seen flying in company. They are exceedingly vigilant in guarding their nests and young from birds of prey, which they attack and drive off with great vigour whenever they approach their vicinity.

CHOUMLA, SHUMLA, or SHIUMLA; a Turkish fortress in the mountains of the Balkan (q. v.). Varna (q. v.) and Choumla are called, on account of their great military importance, *the gates of Constantinople*. The town of Choumla, properly so called, is nearly surrounded by a natural rampart, consisting of a portion of mount Hæmus, or the Balkan. The steep slopes of this great bulwark are covered with detached rocks and close, thorny bushes. The nature of the ground makes it a very advantageous position for the Turkish soldier, who, when sheltered by the inequalities of the ground and a few entrenchments, displays great resolution and address. The town is about a league in length and half a league in breadth, and may contain from 30,000 to 35,000 souls. The fortifications are rudely constructed, but its situation in the midst of a vast natural fortress, capable of containing an immense army, with its magazines, &c., secures it from the enemy's artillery. The air is very healthy in the elevated parts of the Balkan, and in the narrow valleys which lie between its ridges. On the other hand, there cannot be a more unhealthy country than that which extends from the Balkan to the borders of the Danube and the Pruth. This difference between the climate of the mountains and that of the plain is the most effectual defence which nature has given to Choumla. In the late war between Russia and Turkey, it was besieged by the troops of the former power from July 20, 1828, until Oct. 25, of the same year, when they retired, after the conquest of Varna, Oct. 11. On the 11th of June, 1829, a decisive victory was gained by the Russians over the Turks, not far from Choumla. The grand vizier commanded the Turks, who are said to have lost 6000 killed, 1500 prisoners, and 60 pieces of cannon, with large quantities of ammunition and baggage. The loss of the Russians amounted only to 1400 killed and 600 wounded.

CHRISM (from the Greek χρίσμα, salve); the holy oil prepared on Holy Thursday by the Catholic bishops, and used in baptism, confirmation, ordination of priests, and the extreme unction. Hence the name *Christ*, the anointed.

CHRIST (Gr. Χριστὸς, the anointed). *Messiah*, from the Hebrew, has the same signification. See *Christianity*, and *Jesus*.

Christ, Pictures of. Legends exist of a portrait of the Saviour, which king Abgarus of Edessa is said to have possessed. This was miraculously impressed by the Saviour on a napkin which he placed upon his face, and afterwards sent to the king. The handkerchief of St Veronica (Berenice) is said to have also contained a portrait of Christ impressed in a similar way. A picture of Christ, taken by St Luke is likewise mentioned. In a letter, evidently spurious, which Lentulus, the predecessor of Pilate, is said to have written to the Roman senate, Christ is describ-

ed as being of a handsome, manly stature and countenance. Among the existing representations of Christ, the most ancient is in a *basso-relievo* of marble, on a sarcophagus, of the second or third century, in the Vatican. Christ is there exhibited as a young man without beard, with Roman features, flowing and slightly curled hair, wearing a Roman *toga*, and seated upon a curule chair. In the same place, there is another Christ, of the fourth century, with an oval face, Oriental features, parted hair, and a short, straight beard. This representation was the model which the Byzantine and Italian painters followed until the time of Michael Angelo and Raphael. Since the sixteenth century, the Italian school has generally taken the heads of Jupiter and Apollo as the models for the pictures of Christ. Different nations have given his image their own characteristic features. The head of Christ has become the highest point of the art of painting among Christian nations; and men of the greatest genius have laboured to imbody their conceptions of his divinity, the union of the different virtues of his character, his meekness and firmness, and the full perfection of his Godlike nature. The representations of the Saviour by Titian, Leonardo da Vinci, Raphael, &c., are among the sublimest productions of modern art. Christ's head is, for the modern artist, what the head of Jupiter or Apollo was for the ancient, with this difference, however, that it has become more especially the ideal of the painter, whilst the others principally furnished subjects for the genius of the sculptor; and this circumstance shows the difference in the character of the two periods of art, which must, of course, be most apparent in their highest productions. Some of the most elevated expressions of the countenance of the Saviour, e. g. the glowing love of his divine soul, cannot be well represented by the marble. There exist, however, excellent statues of Christ. The two best of modern times are that of Thorwaldsen at Copenhagen, and that of Dannecker at Stuttgart.

CHRIST-CHURCH COLLEGE. See *Oxford.*

CHRIST'S HOSPITAL (generally known by the name of *Blue coat school*, the title having reference to the costume of the children educated there); a school in London, founded by Edward VI., for supporting poor orphans. At the same time St Bartholomew's hospital was founded, for the wounded and diseased, and Bridewell was assigned as a place of confinement for vagabonds. Charles II. connected a mathematical school with it. There are generally from 1000 to 1200 boys and girls at this establishment, receiving instruction, board, and clothing. The great hall at Christ's hospital is remarkable for some very fine pictures.

CHRISTIAN II., king of Denmark, born at Copenhagen, 1481, was educated with little care. While yet a youth, his violent character led him into great extravagances. King John, his father, punished him severely, but in vain. In 1507, he was called to Bergen, to suppress some seditious movements, where he conceived a violent passion for a young Dutch woman, named Dyveke, whose mother kept an inn. Dyveke became the mistress of Christian, who allowed her, and particularly her mother, an unlimited influence over him. He was viceroy in Norway, until the declining health of his father recalled him to Copenhagen. After he had ascended the throne, he married, in 1515, Isabella, sister of Charles V. He afterwards remonstrated with Henry VIII. of England, on account of the piracies committed by the English ships, renewed the treaties which had been made with the grand-duke of Moscow, and endeavoured to deprive the Hanse towns of their commerce. The hopes which this conduct excited among his subjects were soon annihilated by the horrible scenes caused by the death of Dyveke. The relations of Torbern Oxe, governor of the castle of Copenhagen, were accused of having poisoned her. Oxe acknowledged a former passion for her, and the king ordered him to be beheaded. Several other executions spread horror through the whole kingdom. Christian hated the nobility, and protected the commons and the peasantry against their oppressions. In 1516, a papal legate arrived in the North, in order to dispose of indulgences. Christian received him, hoping that he might be useful to him in Sweden, in obtaining the crown, at which he was then aiming. The Swedes were divided into several parties. Gustavus Trolle, archbishop of Upsal, a sworn enemy of Stenon Sture, administrator of the kingdom, had secretly united himself with Christian; but the Swedish states protected Sture, dismissed Trolle, and caused his castle to be demolished. The nuncio, who arrived during these events in Sweden, was gained over by Sture, discovered to him the plans of Christian, and justified the Swedes to the pope against the charges of Trolle. Christian finally arrived at Stockholm in 1518, for the sake of an interview with the administrator, receiving, for his own security, six hostages from the first families. When these hostages, among whom was Gustavus Vasa, arrived at the Danish fleet, the faithless monarch treated them as prisoners, and returned to Denmark. He appeared in Sweden, in 1520, in the middle of winter, at the head of an army. The Swedes were beaten at Bogesund, Jan. 19, and Sture was mortally wounded. The Danes pursued their advantage. Trolle presided over the assembly of the states-general at Upsal, and proposed to them to acknowledge Christian for their king. Although many were disinclined to the union, they were, nevertheless, obliged to submit to it. A general amnesty was proclaimed, and all hastened to profit by it. The capital, to which the widow of the administrator had repaired, offered some resistance. As soon as the sea was open, Christian appeared with his fleet before Stockholm, which did not surrender to him. The summer was passing away; his provisions were nearly exhausted; his troops murmured. At last, he resolved to send Swedish messengers to the inhabitants. His promises, aided by famine, effected what his arms had not been able to accomplish. The gates were opened to him. He promised to maintain the liberty of Sweden, and to forget the past. He arrived at Stockholm near the end of October, demanded from the bishops and senators an act acknowledging him as their hereditary king, and caused himself to be crowned, two days after, by Trolle. He bestowed the honour of knighthood only on foreigners, and declared that he would confer this dignity on no Swedish subject, because he had conquered the country by force of arms. In spite of the general consternation, he ordered public rejoicings, during which he knew how to gain the favour of the multitude. He determined to strengthen the royal authority in Sweden, and to effect his purpose by the annihilation of the first families. His advisers differed only as to the means. Finally, Slaghoek, the king's confessor, reminded him of the excommunication of the enemies of Trolle, and added that, though, as a prince, he might forget the past, he ought to extirpate the heretics, in obedience to the commands of the pope. Accordingly, Trolle demanded the punishment of the heretics; the king appointed commissioners before whom the accused appeared. Christina, the widow of the administrator was among them. To vindicate her husband's memory, she produced the decree of the senate passed in 1517. Christian obtained possession of it, and formed from it his list of proscriptions. The accused were declared guilty, and ninety-four victims

were executed in the presence of the king. These bloody scenes continued in the capital as well as in the provinces. Christian justified himself by the public declaration, that they were necessary for the tranquillity of the kingdom. He then returned to Denmark. His way was marked with blood; he garrisoned all the cities, and committed the same cruelties in Denmark. He soon after went to the Netherlands, to request the assistance of Charles V. against Frederic, duke of Holstein, his uncle, and against the inhabitants of Lubeck, who were always ready to assist the Swedes. On his return to Copenhagen, he found all Sweden in arms. Slaghoek's tyranny had excited a general revolt. Christian gave him the archbishopric of Lund, but soon after caused him to be burnt alive, in order to appease the Pope, who had sent a legate to Denmark, to examine into the murder of the Bishops at Stockholm. In order to reconcile the Pope, he altered every thing in the laws which favoured Lutheranism, for which he had previously shown much inclination. Meanwhile Gustavus Vasa escaped from prison, and raised his standard against the Danes. The states-general, assembled at Wadstena, declared that Christian had forfeited the Swedish crown. The garrison of Stockholm revolted on account of the want of pay. Christian, exasperated by these events, ordered the Danish governors to execute all the rebels. This measure hastened his ruin. Norby still held Stockholm, Calmar, and Abo, three places which were considered as the keys of the kingdom; but he was soon harassed by the inhabitants of Lubeck, who even made an attack upon the coasts of Denmark. Christian, to revenge himself, commenced negotiations with the duke of Holstein, but they were soon interrupted by his own violence. Meanwhile, he published two codes restricting the privileges of the clergy, and extending the rights of the peasantry. They contained many wise laws, which are still in force, but mixed with others which caused general discontent. The nation complained of the debasement of the currency, and the insupportable burden of the taxes. The bishops and senators of Jutland, perceiving the disposition of the people, formed the plan of revolting against the king. About the end of 1522, they renounced their allegiance, declared Christian to have forfeited his rights, and offered the crown to Frederic, duke of Holstein. The King, who suspected their designs, summoned the nobility of Jutland to Callundborg, in Zealand; and as none obeyed the call, he summoned them anew in 1523, to Aarhuus, in Jutland, whither he repaired himself. His arrival compelled the conspirators to hasten the execution of their plans. They assembled in Viborg, and adopted two acts; by one of which they deposed the king, and by the other invited Frederic to take possession of the throne. A civil war was on the point of breaking out, when Christian abandoned his kingdom. In April, 1523, he left Denmark, and took the queen, his children, his treasures, and the archives of the kingdom, on board the fleet. A storm dispersed his ships, threw him upon the coast of Norway, and, after the greatest dangers, he reached Veere, in Zealand. Charles V. contented himself with writing to forbid Frederic, the nobility of Jutland, and the city of Lubeck, to act against Christian. The latter had, meanwhile, raised an army and equipped a fleet, and landed at Opslo, in Norway, in 1531. But his troops suffered new losses. Being attacked in his camp by the Danish and Hanseatic fleet, he shut himself up in the city, and his vessels became a prey to the flames. Deprived of all resources, he proposed a treaty to the Danish generals, who finally granted him a safe conduct, permitting him to repair in the Danish fleet, to Copenhagen, for the purpose of a personal interview with Frederic. In July, 1532, he arrived before Copenhagen. But Frederic rejected the treaty, and the senate ordered the imprisonment of Christian. He was accordingly conveyed to the castle of Sonderburgh, in the island of Alsen. He there passed twelve years in the society, at first, of a dwarf, and afterwards of an old invalid, in a tower, the door of which was walled up. A stone table is still shown, around the edge of which is a line worn by the hand of Christian, whose sole exercise consisted in walking round it, with his hand resting on the surface. He was totally abandoned. When Christian III. ascended the throne, in 1543, his condition was improved, by virtue of a treaty with Charles V. He lived, from 1546, at Callundborg, with a fixed income, and died at this place, Jan. 24, 1559. His wife, Christina, a professor of Lutheranism, faithfully shared his misfortunes until her death, in 1526. He had three children—John, who died at Ratisbon in 1532, at the age of thirteen years; Dorothea, who married Frederic, the elector palatine; and Christina, who married Francis Sforza, duke of Milan, and after his death, Francis, duke of Lorraine. It ought not to be forgotten, that Christian's cruelty was, in some degree, owing to the insolence of the nobility, whose arrogance he was determined to repress.

CHRISTIANIA; capital of the kingdom of Norway, seat of government, and the place where the *storthing* (Norwegian parliament) meet; lon. 10° 49 E.; lat. 59° 53′ 46″ N. It contains 1500 houses, and 11,040 inhabitants, is situated in the diocese of Christiania, or Aggerhuus, on the northern end of the bay of Christiansfiord, in a district where gardening is much pursued. Besides the suburbs, it contains Christiania Proper, built by King Christian IV., in 1624, on a regular plan, the old city, or Opslo, and the citadel, Aggerhuus, which was demolished in 1815. Among the principal buildings are the royal palace, the new council-house, and the exchange. Since 1811, a University (Fredericia) has been established here, with a philological seminary, a botanical garden, an observatory, a library, collections of various kinds, eighteen professors, and 200 students. Christiania also contains a military school, a bank, a commercial institute, an alum factory, &c. It has much trade, chiefly in lumber and iron. Its harbour is excellent. The value of the lumber annually exported is estimated at 810,000 gilders. In the vicinity are 136 sawing-mills, which furnish annually twenty millions of planks.

CHRISTIANITY; the religion instituted by Jesus Christ. Christianity, as it now exists in our minds, has received, from the influence of the priesthood, of national character, of the spirit of the time, and the thousand ways in which it has been brough into contact with politics and science, a quantity of impure additions, which we should first separate, in order to understand what it is in reality. There could be no better means of attaining a correct understanding of it, than to investigate, historically, the religious principles which Jesus himself professed, exhibited in his life, and laboured to introduce into the world, if the investigator could avoid giving the colouring of his own views to his explanation of the records of the origin of Christianity. But the most honest inquirers have not entirely succeeded in so doing. Even the Christian theologians of the present age—less divided, in some countries, for instance in Germany, by the spirit of creeds and sects, than by the difference of scientific methods and philosophical speculations—dispute respecting the principle that constitutes the basis of the religion of Christ, which, in other respects, has been unanimously adopted. (See the articles *Religion*, *Revelation*, *Ration-*

alism, and *Supernaturalism*.) This principle appears, by its effect upon the numerous nations, differing so greatly in intellectual character and cultivation, which received Christianity at first, to have been a universal truth, adapted to the whole human race, and of a divine, all-uniting power. The Jews believed in a living God, the Creator of all things, and, so far, had just views of the source of religion. The Greeks, besides developing the principle of the beautiful in their works of art, had laid the foundations of valuable sciences applicable to the business of life. The Romans had established the principles of law and political administration, and proved their value by experience. These scattered elements of moral and intellectual cultivation, insufficient, in their disunited state, to bring about the true happiness and moral perfection of man in his social and individual capacity, were refined, perfected and combined by Christianity, through the law of a pure benevolence, the highest aim of which is that of rendering men good and happy, like God, and which finds, in the idea of a kingdom of heaven upon earth, announced and realized by Christ, all the means of executing its design. His religion supplied what was wanting to these nations—a religious character to the science of Greece, moral elevation to the legislative spirit of Rome, liberty and light to the devotion of the Jews—and, by inculcating the precept of universal love of mankind, raised the narrow spirit of patriotism to the extended feeling of general philanthropy. Thus the endeavours of ancient times after moral perfection were directed and concentrated by Christianity, which supplied, at the same time, a motive for diffusing more widely that light and those advantages which mystery and the spirit of castes had formerly withheld from the multitude. It conveyed the highest ideas, the most important truths and principles, the purest laws of moral life, to all ranks; it proved the possibility of perfect virtue, through the example of its Founder; it laid the foundation for the peace of the world, through the doctrine of the reconciliation of men with God and with each other; and, directing their minds and hearts towards Jesus, the Author and Finisher of their faith, the crucified, arisen, and glorified Mediator between heaven and earth, it taught them to discern the benevolent connexion of the future life with the present. The history of Jesus, and the preparations of God for his mission, afforded the materials from which Christians formed their conceptions of the character and tendency of their religion.

The first community of the followers of Jesus was formed at Jerusalem, soon after the death of their Master. Another, at Antioch, in Syria, first assumed (about 65) the name of *Christians*, which had originally been given to them by their adversaries, as a term of reproach; and the travels of the apostles spread Christianity through the provinces of the Roman empire. Palestine, Syria, Natolia, Greece, the islands of the Mediterranean, Italy, and the northern coast of Africa, as early as the first century, contained societies of Christians. Their ecclesiastical discipline was simple, and conformable to their humble condition, and they continued to acquire strength amidst all kinds of oppression. (See *Persecutions*.) At the end of the second century, Christians were to be found in all the provinces, and, at the end of the third century, almost one half of the inhabitants of the Roman empire, and of several neighbouring countries, professed this belief. The endeavour to preserve a unity of faith (see *Orthodoxy*) and of church discipline, caused numberless disputes among those of different opinions (see *Heretics* and *Sects*), and led to the establishment of an ecclesiastical tyranny, notwithstanding the oppressions which the first Christians had experienced from a similar institution — the Jewish priesthood. At the beginning of the fourth century, when the Christians obtained toleration by means of Constantine the Great, and, soon after, the superiority in the Roman empire, the bishops exercised the power of arbiters of faith, in the first general council (see *Nice*), 325, by instituting a creed binding on all Christians. Upon this foundation, the later councils (q. v.), assisted by those writers who are honoured by the church as its fathers and teachers (see *Fathers of the Church, Jerome, Ambrose, Augustine*, &c.), erected the edifice of the orthodox system; while the superior portion of the ecclesiastics, who were now transformed into priests, and elevated above the laity as a privileged, sacred order (see *Clergy* and *Priests*), were enabled, partly by their increasing authority in matters of church discipline, partly by the belief, which they had encouraged, that certain traditions from the apostles were inherited by them only (see *Traditions*), to preserve the prerogatives at first granted them out of love and gratitude, but afterwards much extended by themselves, and to make themselves gradually masters of the church. (See *Bishops, Patriarchs, Popes, Hierarchy*.) Their views were promoted by the favour of the emperors (see *Theodosius the Great*) (with slight interruptions in the reign of Julian and some of his successors), by the increased splendour and various ceremonials of divine worship (see *Mass, Saints, Relics, Iconoclasts*), by the decline of classical learning, the increasing superstition resulting from this increase of ignorance, and by the establishment of convents and monks. (See *Convents*.) In this form, appealing to the senses more than to the understanding, Christianity, which had been introduced among the Goths in the fourth century, was spread among the other Teutonic nations in the west and north of Europe, and subjected to its power, during the seventh and eighth centuries, the rude warriors who founded new kingdoms on the ruins of the Western Empire, while it was losing ground, in Asia and Africa, before the encroachments of the Saracens, by whose rigorous measures hundreds of thousands of Christians were converted to Mohammedanism, the heretical sects which had been disowned by the orthodox church (see *Jacobites, Copts, Armenians, Maronites, Nestorians*) being almost the only Christians who maintained themselves in the East.

During this progress of Mohammedanism, which, in Europe, extended only to Spain and Sicily, the Roman Popes (see *Popes* and *Gregory* VII.), who were advancing systematically to ecclesiastical superiority in the west of Europe, gained more in the north, and, soon after, in the east of this quarter of the world, by the conversion of the Sclavonic and Scandinavian nations (from the tenth to the twelfth century), than they had lost in other regions. For the Mohammedans had chiefly overrun the territory of the eastern church (see *Greek Church*), which had been, since the fifth century, no longer one with the Western (Latin) church, and had, by degrees, become entirely separate from it. In the tenth century, it received some new adherents, by the conversion of the Russians, who are now its most powerful support. But the crusaders, who were led, partly by religious enthusiasm, partly by the desire of conquest and adventures (1096—1150), to attempt the recovery of the holy sepulchre, gained the new kingdom of Jerusalem, not for the Greek emperor, but for themselves and the papal hierarchy. (See *Crusades*.) The confusion which this finally unsuccessful undertaking introduced into the civil and domestic affairs of the western nations, gave the church a favourable opportunity of increasing its possessions, and asserting its pretensions to universal monarchy. But contrary to the wishes and expectations of the rulers of

the church, the remains of ancient heresies (see *Manichæans, Paulicians*) were introduced into the West, through the increased intercourse of nations, and by the returning crusaders, and new and more liberal ideas were propagated springing from the philosophical spirit of examination of some schoolmen (see *Abelard, Arnold of Brescia*), and the indignation excited by the corruptions of the clergy. These kindled an opposition among all the societies and sects against the Roman hierarchy. (See *Cathari, Albigenses, Waldenses.*) The foundation and multiplication of ecclesiastical orders (q. v.), particularly the Franciscans and Dominicans, for the care of souls and the instruction of the people, which had been neglected by the secular priests, did not remedy the evil, because they laboured, in general, more actively to promote the interests of the church and the papacy, than to remove superstition and ignorance; and bold speculations, which would not yield to their persuasion, were still less likely to be extirpated by the power of the inquisition (q. v.), which armed itself with fire and sword. The great difference of the Christian religion, as it was then taught and practised, from the religion of Jesus Christ, the insufficiency of what the church taught to the religious wants of the human mind and heart, were apparent to many, partly from their knowledge of the spirit of Jesus, derived from the Bible, which was already studied, in secret, by curious readers, in spite of the prohibitions of the church, and partly from the bold eloquence of single teachers and chiefs of sects. Ecclesiastical orders also desired to pursue their own course (see *Knights Templars, Franciscans*); offended princes forgot the great services of the papal power in promoting the cultivation of nations in the first centuries of the middle ages; and the popes themselves made little effort to reform or conceal the corruption of their court and of the clergy. They even afforded the scandalous spectacle of a schism in the church (see *Schism, Popes*, and *Antipope*), which was distracted, after 1378, for more than 30 years, by the quarrels between two candidates, who both asserted their right to the papal chair. This dispute was settled only by the decrees of the council of Constance (1414—1418), which were very unfavourable to the papal power. The doctrines of the English Wickliffe (q. v.) had already given rise to a party opposed to the popedom; and the revolt of the adherents of the Bohemian reformer (see *Huss, Hussites*), who was burnt at Constance on account of similar doctrines, extorted from the council of Bale (1432—43) certain *compacts*, which, being firmly maintained, proved to the friends of a reformation in the head and members of the church (proposed, but without success, at the council of Bale), what a firm and united opposition to the abuses of the Roman church might be able to effect. We refer the reader to the article *Reformation*, and the articles relating to it, for a history of the causes, progress, and consequences of this great event. But that this great change in the church has revived primitive Christianity in the spirit of its Founder, the most zealous Protestants will not assert, any more than the reflecting Catholic will deny the necessity of such a reform, and the real merits of Protestantism in promoting it. (See *Trent, Council of, Roman Catholic Church*, and *Protestantism.*)

The forms under which Christianity appears, in our days, are very different. The example of the south of Europe proves how easily this religion naturalizes itself, but, also, how much it loses, under the influence of sensuality and an over-active fancy, of the simple grandeur, the moral power and pure spirit of its original character. Protestantism removed from the northern nations many of the burdens with which the predominance of the earthly nature had oppressed the spirit of religion. By opening the Bible to all, it aroused the spirit of inquiry, but also gave rise to an immense variety of sects, springing from the different views which different men were led to form from the study of the sacred volume. The present moral and political condition of Christian Europe, though affected by so many influences foreign to religion, bears the stamp of a cultivation springing from Christianity, and this has been impressed upon its colonies in distant lands, among which the United States of North America alone have advanced to the principle of universal toleration. But if we look among our contemporaries for Christianity as it dwelt and operated in Christ, we shall find it pure in no nation and in no religious party; but we perceive its features in the conduct of the enlightened and pious among all nations, who love Christ, and are penetrated with his Spirit. How Christianity will develope itself in North America, where all sects are tolerated, what will be the result of this immense variety of opinions and creeds, is, as yet, a matter of speculation. The general views of the great body of Protestant sects, however, have so much in common, that they may still be considered as forming one great family among the principal divisions of the Christian world. Whether this will be true after a considerable time has elapsed, is at least doubtful, as the Unitarians and Trinitarians seem to be taking essentially different directions.

CHRISTIANS; the general name of the followers of Christ. See *Christianity*.

CHRISTIANS; the name of a denomination, in the United States, adopted to express their renunciation of all sectarianism. They have become numerous in all parts of the country, the number of their churches, in 1827, being estimated at about 1000. Each church is an independent body: they recognize no creed, no authority in matters of doctrine: the Scriptures, which every individual must interpret for himself, are their only rule of faith: admission to the church is obtained by a simple profession of belief in Christianity: speculative belief they treat as of little importance, compared with virtue of character. In New England, they separated principally from the Calvinistic Baptists; in the Southern States, from the Methodists; and in the Western, from the Presbyterians. There was, therefore, at first, a great diversity of opinion and practice among them, each church retaining some of the peculiarities of the sects from which it seceded. In New England, the churches were established on the principle of close communion, which was soon abandoned. In the South and West, they were Pedobaptists, but have since become Baptists. Nearly all were, at first, Trinitarians; but the doctrine of the Trinity, and its concomitant doctrines, are now universally rejected by them. To maintain a connexion between the different churches, one or more *conferences* are formed in each state, consisting of members delegated from each church. In 1827, there were twenty-three of these conferences, which again form, by delegation, the United States General Christian Conference. They have several periodical works (Christian Herald, Portsmouth, New Hampshire; Gospel Luminary, New York; Christian Messenger, Kentucky), but no theological seminary, considering that whoever understands the gospel may teach it. They consider Christ as the Son of God, miraculously conceived, whose death was a ratification of the new covenant, not a propitiatory sacrifice; and the Holy Ghost or Spirit as the power or energy of God, exerted in converting the wicked and strengthening the good.

CHRISTIANS OF ST THOMAS; the name of a

sect of Christians on the coast of Malabar, in the East Indies, to which region the apostle St Thomas is said to have carried the gospel. They belong to those Christians who, in the year 499, united to form a Syrian and Chaldaic church in Central and Eastern Asia, and are, like them, Nestorians. (See *Syrian Christians*.) They have, however, retained rather more strongly than the latter the features of their descent from the earliest Christian communities. Like these, they still celebrate the *agapes*, or love-feasts, portion maidens from the property of the church, and provide for their poor. Their notions respecting the Lord's supper incline to those of the Protestants, but, in celebrating it, they use bread with salt and oil. At the time of baptism, they anoint the body of the infant with oil. These two ceremonies, together with the consecration of priests, are the only sacraments which they acknowledge. Their priests are distinguished by the tonsure, are allowed to marry, and were, until the 16th century, under a Nestorian patriarch at Babylon, now at Mosul, from whom they received their bishop, and upon whom they are also dependent for the consecration of their priests. Their churches contain, except the cross, no symbols nor pictures. Their liturgy is similar to the Syrian, and the Syrian language is used in it. When the Portuguese occupied the East Indies, the Roman Catholic clergy endeavoured to subject the Christians of Saint Thomas to the government of the pope. The archbishop of Goa succeeded, in 1599, in persuading them to submit, and form a part of his diocese. They were obliged to renounce the Nestorian faith, adopt a few catholic ceremonies, and obey a Jesuit, who became a bishop. But, after the Portuguese were supplanted by the Dutch on the coast of Malabar, this union of the Christians of Saint Thomas with the Roman church ceased, and they returned to their old forms. At present, they are, under the British government, free from any ecclesiastical restraint, and form among themselves a kind of spiritual republic, under a bishop chosen by themselves, and in which the priests and elders administer justice, using excommunication as a means of punishment. In their political relations to the natives, they belong to the class of *Nairi*, or nobility of the second rank, are allowed to ride on elephants, and to carry on commerce and agriculture, instead of practising mechanical trades, like the lower classes. Travellers describe them as very ignorant, but, at the same time, of very good morals.

CHRISTIANSAND; a government and bishopric of Norway, occupying the S. W. part of the country. The population of this division of the kingdom is estimated at 134,000; square miles, 14,800. Though one of the most fertile parts of the country, the grain produced is not adequate to the consumption of the inhabitants, and grain is therefore one of the chief imports. The inhabitants are principally employed in the fisheries and in cutting trees. Timber forms the chief article of their export.—The capital is also called *Christiansand*, and is situated on the S. coast. The streets are broad and straight, and the houses have extensive gardens. It is considered as the fourth town in the kingdom. It contains about 5000 inhabitants. Its harbour is one of the best in Norway. It derives some support from the trade in timber, but depends chiefly on the repair of vessels which put in there to refit. Lon. 8° 3′ E.; lat. 58° 8′ N.

CHRISTIANS-OE, or ERT-HOLM; a group of islands, in the Baltic, belonging to Denmark, named from the chief island, which has a much-frequented port, a light-house and a castle; lon. 14° 47′ E.; lat. 55° 13 N.

CHRISTINA, queen of Sweden, born Dec. 9, 1626, daughter of Gustavus Adolphus and the princess Maria Eleonore of Brandenburg, was distinguished for beauty, and taste for the liberal arts. Gustavus, who beheld in Christina the only support of his throne, took the greatest care of her education, which was conducted in a masculine manner. She was instructed in all the sciences adapted to improve her mind and strengthen her character. After the death of Gustavus, at Lutzen, in 1632, the states-general appointed guardians to the queen Christina, then but six years old. These were the five highest officers of the crown, who were intrusted, at the same time, with the administration of the kingdom. The education of Christina was continued according to the plan of Gustavus Adolphus. Endowed with a lively imagination, a good memory, and uncommon intelligence, she made the most rapid progress. She learned the ancient languages, history, geography, politics, and renounced the pleasures of her age in order to devote herself entirely to study. She already betrayed those peculiarities which characterized her whole life, and which were, perhaps, as much the consequence of her education as of her natural disposition. She did not like to appear in the female dress, made long journeys on foot or on horseback, and delighted in the fatigues and even the dangers of the chase. She submitted reluctantly to the customs of the court, alternately treating those who surrounded her with the greatest familiarity and with haughtiness or commanding dignity. She honoured the chancellor Oxenstiern as a father, and learned from him the art of governing. She soon showed in the assembly of the states, a maturity of understanding which astonished her guardians. In 1642, the states-general proposed to her to take the administration into her own hands; but she excused herself on the ground of her youth. Only two years after, she took upon herself the government. A great talent for business, and great firmness of purpose, distinguished her first steps. She terminated the war with Denmark, begun in 1644, and obtained several provinces by the treaty concluded at Bromsebro, in 1645. She then, contrary to the advice of Oxenstiern, who hoped to gain, by the continuance of the war, still greater advantages for Sweden, laboured to re-establish peace in Germany, in order to be able to devote herself uninterruptedly to the sciences and the arts of peace. Christina was fitted, by her talents and the circumstances in which she was placed, to play the most distinguished part in the North of Europe, and, for some time, seemed sensible of the charms of her lofty station. On many occasions she maintained the dignity of her crown and the honour of her country. France, Spain, Holland, and England sought her friendship. She promoted commerce by wise legislation, and patronized the learned and literary institutions. The nation was devoted to her, and rejoiced to see the daughter of Gustavus at the head of the government, surrounded by generals and statesmen formed by that great prince. It was the universal wish that the queen should choose a husband; but her love of independence rendered her averse to such a connexion. Among the princes who sued for her hand, her cousin, Charles Gustavus of Deuxponts, was distinguished for his intelligence, noble character, and extensive knowledge. She declined his offer, but induced the states-general, in 1749 to designate him for her successor. In 1650, she caused herself to be crowned, with great pomp, and with the title of *king*. From that time, a striking change in her conduct was perceptible. She neglected her ancient ministers, and listened to the advice of ambitious favourites. Intrigues and base passions succeeded to her former noble and useful views. The public treasure was squandered with extravagant profusion. Distinctions were conferred upon

the undeserving, and jealousy produced murmurs, complaints, and factions. In this state of confusion, the queen declared her intention of abdicating the crown. The old ministers, honouring the memory of Gustavus Adolphus, remonstrated in the strongest terms, and, above all, Oxenstiern expressed himself with so much energy, that the queen desisted from her resolution. She now grasped with more firmness the reins of government, and dissipated, for a time, the clouds which had darkened her throne. She occupied herself again with study, bought paintings, medals, manuscripts, books, maintained a correspondence with many learned men, and invited several to her court. Descartes, Grotius, Salmasius, Bochart, Huet, Chevreau, Naudé, Vossius, Conring, Meibom, appeared in Stockholm, and the queen conversed familiarly with them on literary and philosophical subjects. Among the literary amusements which she united with serious studies, was the Grecian dance, which she caused to be exhibited by Meibom (q. v.) and Naudé. But new troubles occurred; and the conspiracy of Messenius threatened not only the favourites of the queen, but the queen herself. Christina, who loved whatever was uncommon, resumed her determination to resign the crown.

In 1654, at the age of twenty-nine, she assembled the states-general at Upsal, and, in their presence, laid aside the insignia of royalty, to surrender them into the hands of prince Charles Gustavus. She reserved to herself a certain income, entire independence, and full power over her suite and household. A few days after, she left Sweden, and went through Denmark and Germany to Brussels, where she made a public entry, and remained for some time. There she made a secret profession of the Catholic religion, which she afterwards publicly confirmed in Inspruck —a step which excited great astonishment, and of the causes of which nothing certain is known. Christina went from Inspruck to Rome, which she entered on horse-back, in the costume of an Amazon, with great pomp. When the pope Alexander VII. confirmed her, she adopted the surname of *Alessandra*. She visited the monuments of the city, and attentively examined every thing which could awaken historical recollections. In 1656, she visited France, and remained at Fontainebleau, at Compiegne, where the court was then held, and at Paris. Her dress and manners produced an unfavourable impression, but her talents and knowledge were generally admired. She offered to mediate between France and Spain; but Mazarin declined the offer, and succeeded in accelerating her departure from France under various pretexts. In the following year, she returned. This second residence in France was rendered remarkable by the execution of her grand equery, Monaldeschi, who had enjoyed her entire confidence, but whom she accused of treason. This act of vengeance, though defended by Leibnitz, is a stain on the memory of Christina. The French court testified its displeasure, and two months passed before the queen showed herself publicly in Paris. In 1658, she returned to Rome, where she received very unpleasing news from Sweden. Her revenue was not transmitted to her, and nobody would make her advances. Alexander VII. relieved her from this embarrassment by a pension of 12,000 scudi (dollars). After the death of Charles Gustavus, in 1660, the queen made a visit to Sweden, under pretence of wishing to arrange her private affairs; but it was soon perceived that she had other views. As the crown-prince was very young, she declared, that, in case of his death, she should lay claim to the throne. This project was unfavourably received, and she was compelled to sign a formal act of abdication. Other unpleasant circumstances induced her to abandon Stockholm. She visited Sweden a second time in 1666, but returned to Hamburg without reaching the capital, having heard that the public exercise of her religion would not be allowed her. About this time, she aspired to the Polish crown, but the Poles took no notice of her wishes. Finally, she returned to Italy, where she passed the remainder of her life, at Rome, in the cultivation of the arts and sciences. She founded an academy, collected valuable manuscripts, medals and paintings, and died, after having experienced many vexations, April 19, 1689. She was interred in the church of St Peter, and the pope erected a monument to her with a long inscription. She had asked only for these few words: *Vixit Christina annos LXIII.* Her principal heir was the cardinal Azzolini, her intendant. Her library was bought by pope Alexander VIII., who placed 900 manuscripts of this collection in the Vatican, and gave the remainder of the books to his family. Odescalchi, the nephew of Innocent XI., purchased the paintings and antiquities. The duke of Orleans, regent of France, bought a part of the paintings for 90,000 scudi, in 1722. The value of these collections may be learned from the two works which give a description of them, namely, Havercamp's *Nummophylacium Reginæ Christinæ*, and the *Museum Odescalcum*.

The life of Christina presents a series of inconsistencies and contradictions: we see, on one side, magnanimity, frankness, mildness; on the other, vanity, severity, revenge, and dissimulation. Her knowledge of the world, her acuteness and penetration, did not preserve her from visionary projects, from the dreams of alchemy and astrology, and other illusions. She left some small works, in which her character and manner of thinking are perceptible, and which, for the most part, are contained in Archenholz's Memoirs of this princess (1751, 4 vols. 4to.). The authenticity of the letters which appeared in 1762, under her name, is not proved.

CHRISTMAS, the feast of Christ's birth, was, according to many critics, not celebrated in the first centuries of the Christian church, as the Christian usage, in general, was, to celebrate the death of remarkable persons rather than their birth. The death of the martyr Stephen, and the massacre of the innocents at Bethlehem, had been already long celebrated, when, perhaps in opposition to the doctrine of the Manichæans respecting the birth of the Saviour, a feast was established, in memory of this event, in the 4th century. In the 5th century, the Western church ordered it to be celebrated for ever on the day of the old Roman feast of the birth of Sol, on the 25th of December, though no information respecting the day of Christ's birth existed. In the East, Christmas was celebrated on the 6th of January. From the gospel of St Luke, it was known that Christ was born during the night, and therefore divine service was performed in the night of Dec. 24—25, from which circumstance Christmas is called, in German, *Weihnachten*, i. e. Holy or Consecrated Night. The feasts of the martyr Stephen and the evangelist St John were united with it, and a feast of three days' continuance was thus formed. In the ecclesiastical year, this festival gives name to a period extending from the first Sunday of Advent to the feast of Epiphany, Jan. 6. Some say that Christmas has always been celebrated in the church. In the Catholic church, three masses are performed—one at midnight, one at daybreak, and one in the morning. In the Greek and Roman churches, the manger, the holy family, &c., are sometimes represented at large. Some convents in Rome, chiefly the Franciscans, are famous for attracting many people by such exhibitions. The church of England ce-

lebrates this feast, as do the great body of European Protestants. In the United States, it is little regarded, except by the Episcopalians. The custom of making presents on Christmas-eve, is derived from an old heathen usage, practised at the feast of the birth of Sol, or, in Germany, on the occasion of some feast peculiar to that country (at least the *Ruprecht* seems to have had such an origin); but it has become consecrated by ages, and contributes a great deal to make this festival an interesting event to families. In the north of Germany, this custom prevails most, pervading all the classes and relations of society. In German churches, sermons are delivered on Christmas-eve for the benefit of children, who attend, carrying each a little taper. In the Catholic church, the *officium pastorum* is sung, in which a chorus of children respond to the priest.

CHRISTOPHE, Henri, king of Hayti, was born Oct. 6, 1767, in the island of Grenada, as stated by some, but, as others say, in that of St Christopher. According to the latter account, he was carried to St Domingo, at the age of twelve, sold as a slave, and employed by his new master in the business of a cook, which calling he exercised at the Cape. Others relate that, after having served in the American war, and received a wound at the siege of Savannah, he went to St Domingo, and was employed on the plantation of Limonade, in the capacity of an overseer, wherein he displayed his characteristic severity. From the commencement of the troubles among the blacks, he took a decided part in favour of independence, and signalized himself by his energy, boldness and activity, in many bloody engagements. Toussaint-Louverture, the acknowledged chief of the blacks, at length gave him the commission of brigadier-general, and employed him to suppress an insurrection headed by his nephew Moyse. This object was speedily accomplished by Christophe, who made himself master of the person of Moyse, and succeeded him as governor of the province of the North. The execution of Moyse excited new troubles at the Cape, which the activity and intrepidity of Christophe completely suppressed. He commanded there in 1802, when Leclerc arrived with a French army, destined for the subjugation of the Negroes. Most of them, deceived by the promises of Leclerc, at first gave way to his designs; but Dessalines and Christophe resisted from the beginning, and were declared outlaws. Christophe was compelled to make his peace, but resumed arms again upon the perfidious seizure of the person of Toussaint. The climate aided the heroic efforts of Dessalines and Christophe, and, at the close of 1805, there was no longer a French force in Hayti,—for so the island was now denominated by the insurgent chiefs. During the short-lived government of Dessalines, Christophe was general-in-chief of the Haytian army; and, being the senior officer, and most distinguished among the blacks, possessed, of course, powerful claims to succeed him in authority. But the popularity of Petion in the South balanced that of Christophe in the North. In February, 1807, an assembly convened at the Cape appointed Christophe president for life of the state of Hayti; and, about the same time, a republic was organized at Port-au-Prince, with Petion at its head. A civil war between the two chiefs ensued, but did not prevent Christophe from taking judicious measures to establish public order in the territory which he governed. He organized the administration, the tribunals, the marine, and the army, made suitable regulations for the encouragement of agriculture, commerce, and other branches of industry among his people, and, by his energy, attained the most flattering results. His military force was placed on a respectable footing, and his finances were brought into a flourishing condition. He constructed fortifications, and was enabled to set the French at defiance. Following the example of Napoleon, whom he imitated, he abolished the republican forms, March 28, 1811, and was proclaimed king of Hayti, by the name of *Henri I.* The dignity and title were made hereditary in his family; a hereditary nobility was created, to give lustre and strength to the new institutions, with an appropriate order of knighthood; and, to complete the imitation of feudal sovereignties, he was solemnly crowned at the Cape, June 2, 1812, with the ceremonies customary in Europe. He also sought to perpetuate his name by the compilation of the *Code Henri*—a digest founded upon the *Code Napoleon*, but not servilely copied. On the contrary, it was judiciously adapted to the situation of Hayti. In 1813, some cases of defection occurred among his subjects, which tended to exasperate the violent and suspicious temper of Christophe, and prompted him to impolitic acts of cruelty. In 1814, he and Petion suspended hostilities, not by a formal agreement, but, as it were, by tacit consent. For several years in succession, after this, the efforts of the French to regain their authority in the island gave a new turn to the policy of Christophe's government. He constantly refused to hear any proposition from the ex-colonists, short of an acknowledgment of the unqualified independence of the island; and he adopted the most decided measures to counteract the attempts made by France. Beside his military preparations for defence against aggression, he multiplied, through the agency of the press, writings calculated to render the views of the ex-colonists odious, and to maintain the spirit of independence among the emancipated blacks. To further the same object, he conceived, and, at one period, seriously set about effecting, the plan of substituting the English language in the island in place of the French; his intercourse with the English and American merchants having communicated to him a partiality for their language. This project entered into a system of general education, which he devised for the Haytians. Things continued to proceed in this way until the death of Petion, in 1818, and the accession of Boyer. Discontents had increased, meanwhile, among the subjects of Christophe, who contrasted the mild and easy rule of Boyer with the iron despotism under which they groaned; and the army itself was ripe for a change. Insurrection began among the garrison of St Marc, which mutinied in a body, killed the governor of the town, and sent a deputation to Boyer, signifying their desire to join the republic. Boyer hastily assembled a force of 15,000 men, and marched to the support of the insurgent garrison. At this time, Christophe was confined, by illness, in his fortified palace of Sans Souci, where he commonly resided. The insurrection soon spread to the Cape, where Richard, duc de Marmalade, and one of the first dignitaries of the kingdom proclaimed the abolition of royalty at the head of the troops. The *elite* of Christophe's army, composing his guard of about 1500 men, continued faithful to him for a while, but, when marched up to oppose the insurgents from the Cape, joined with the latter in demanding the deposition of Christophe. Perceiving his case to be desperate, and resolved not to gratify the insurgents by becoming their prisoner, Christophe shot himself with a pistol, October 8, 1820. His corpse remained exposed several days on the highway, and his eldest son was massacred; but Boyer protected his widow and daughters from injury, and enabled them to retire to Europe in the possession of a competent fortune. A large treasure was found in fort Henri, which Christophe had amassed from the customs on merchandise. His palace was dismantled by the populace, who seemed to take pleasure in de-

facing what had cost them so much toil to construct. Thus ended a reign, from which the friends of the blacks anticipated much, and with justice. Christophe's policy was probably better calculated than that of Petion and Boyer to advance the prosperity of Hayti. Agriculture and commerce flourished under him, and declined under the latter; but, his government being purely a military despotism, in which he himself was every thing, and the wishes of his people were totally disregarded, the administration degenerated into a system of tyranny which proved insupportable. (*An Necrol.*, 1821; Franklin's *Hayti;* Malo, *His. d'Hayti.*)

CHRISTOPHER, duke of Wurtemberg, one of the wisest rulers mentioned in history, was born in 1515. His youth was a constant scene of adversity. When he was but four years old, the confederated Suabian cities expelled his father, the duke of Wurtemberg, from his dominions, and sold the dukedom to Austria. Christopher was brought to Vienna, and was hardly saved by his tutor, Tyfferni, from the hands of the Turks, when that city was besieged by Solyman. He was a second time preserved from captivity, by the same individual, in 1532, when Charles V. intended to bury his person and his claims on Wurtemberg in a Spanish convent. Christopher had been conveyed almost to the frontiers of Spain, when he fled, and safely reached Bavaria, the duke of which was his uncle, and, together with Philip of Hesse, now commenced a war against Austria, to compel her to resign her claims on Wurtemberg. Francis I. supplied them with money to carry on the contest. The battle of Laufen, in 1534, restored the father of Christopher to the government of Wurtemberg. Christopher himself, whom his father disliked, went into the French service. After eight years, he was recalled. In 1550, his father died; but he could not consider himself securely possessed of the dukedom until 1552, when he immediately began to devote himself in every way to the improvement of his subjects. He re-established the Lutheran religion, which had been prohibited in the interregnum, and, in so doing, gratified the wishes of his subjects. But he did not appropriate the possessions of convents, and other ecclesiastical establishments, to himself, as so many or most of the Protestant princes did, but formed of them a great fund, called the *Wurtembergian church property*, to be used for supplying the wants of the church, and for other beneficent purposes. The Wurtembergian *cloister schools*, for the education of young clergymen, and the great theological seminary at Tubingen, are his work. He improved the schools so, that education in Wurtemberg, even at the present time, is, perhaps in a more flourishing state than in any other part of the world. He extended the liberties of his subjects, and established a civil code, which still exists. At the same time, he was continually attentive to the state of Europe. The fate of Protestantism in Germany was a subject in which he took great interest. He had an interview with Catharine of Medicis and the Guises, in order to alleviate the fate of the Huguenots, and contributed much to the religious peace at Augsburg in 1555. He endeavoured to unite the Protestant princes of Germany, and was intrusted with many highly honourable commissions by the empire. He ruled eighteen years, and died in December, 1568; but lives still in the memory of the people of Wurtemberg, who regard him as the model of a ruler. J. C. Pfister has well described the life of Christopher.

CHRISTOPHER, St; a saint whose name and worship are celebrated, but whose history is little known. He is reported to have been a native of Syria or Cilicia, who was baptized by St Babylas, bishop of Antioch, and received the crown of martyrdom, in Asia Minor, about the middle of the third century. Relics of him are found in several places, principally in Spain. The Eastern church celebrates his festival on the 9th of May; the Western, on the 25th of July. His intercession was particularly sought in the time of the plague. *Christopher*, or *Christophel*, literally means *bearer of Christ*. He is represented as a giant, bearing the child Jesus upon his shoulders through the sea, which refers to a legend of this saint. The St Christopher of Hemmling is one of the finest pictures in the gallery of Boisserée (q. v.).

CHRISTOPHER, St (commonly called *St Kitt's*); an island in the West Indies, belonging to Great Britain, discovered by Columbus in 1493, about fifteen miles in length, and, in general, about four in breadth, but towards the eastern extremity not more than three. Between that part and the rest of the island is a strip of land three miles in length, which does not measure half a mile across. This island contains 43,726 acres, of which about 17,000 acres are appropriated to the growth of sugar, and 4000 to pasturage. As sugar is the only commodity of any consequence that is raised, except the necessary articles of food, and a little cotton, it is probable that nearly one half of the whole island is unfit for cultivation. The interior part of the country consists, indeed, of many rugged precipices and barren mountains. Of these the loftiest is mount Misery (evidently an extinguished volcano), which rises 3711 feet in perpendicular height from the sea. The general average produce of sugar for a series of years is 16,000 hogsheads of sixteen cwt., which, as one half only of the whole cane land, or 8500 acres, is annually cut (the remainder being young canes), gives nearly two hogsheads of sixteen cwt. per acre for the whole of the land in ripe canes. This island is divided into nine parishes, and contains four towns and hamlets, viz. Basseterre, the present capital, as it was formerly that of the French, containing about 800 houses, Sandy Point, Old Road and Deep Bay. Of these, the two first are ports of entry, established by law. The fortifications consist of Charles Fort and Brimstone Hill, both near Sandy Point, three batteries at Basseterre, one at Fig-tree Bay, another at Palmetto Point, and some smaller ones of no great importance. Population, in 1823—4, according to Humboldt, 23,000, of whom 3500 were free persons, and 19,500 slaves. Official value of imports and exports:—

	Imports.	*Exports.*
In 1809 . .	£266,064 . .	132,845
1810 . . .	253,611 . . .	89,362

Lon. 62° 49′ W.; lat. 17° 19′ N.

CHROMATE OF IRON, or CHROMEISENSTEIN, is a mineral substance of very considerable interest, as affording one of the most beautiful and durable pigments in the arts. It is found disseminated in grains and imperfectly crystallized masses,—occasionally in regular octahedral crystals, its primary form,—of a black colour, a shining and somewhat metallic lustre. It scratches glass, is opaque, and has a specific gravity of 4.03. According to Vauquelin, that of France consists of 43 chromic acid, 34.7 oxide of iron, 20.3 alumine, silex 2. But chemists, at the present day, consider the chrome in this mineral in the state of an oxide, and not of an acid; accordingly the mineral is now more correctly denominated the *ferruginous oxide of chrome*. It is found in great abundance in Maryland, at the Bare hills, near Baltimore, and is contained in a steatitic or serpentine rock. It also occurs in small quantities at numerous other places in the United States, and has many localities in other countries.

CHROMATIC, in music; one of the three ancient genera—diatonic, chromatic and enharmonic.

The word *chromatic* has been adopted, as it is believed, because the Greeks were in the habit of designating this genus by characters of various colours, or, as some say, because the chromatic genus is a mean between the other two, as colour is a mean between white and black (this seems to be a very poor explanation); or, lastly, because the chromatic genus, by its semitones, varies and embellishes the diatonic, thus producing an effect similar to that of colouring. In modern music, the word *chromatic* simply means a succession of semitones, ascending or descending. Thus the expressions *chromatic semitone* (the interval which is found between any given note and that same note raised by a sharp or lowered by a flat), *chromatic scale*, *chromatic modulation*, are terms in use.

CHROME; the name of a metal, which, combined with oxygen so as to be in the state of an acid, was discovered by Vauquelin, in an ore of lead from Siberia. This metal has since been found combined with iron in America, and at Unst, one of the Shetland isles. It appears also to be the colouring principle of the emerald and the ruby, and has received its name from its property of assuming brilliant colours in the combinations into which it enters. Chrome, which has hitherto been procured in very small quantities, owing to its powerful attraction for oxygen, may be obtained by mixing the oxide of chrome with charcoal, and exposing the mixture to the most intense heat of a smith's forge. It is brittle, of a grayish-white colour, and very infusible. Its specific gravity is 5·9. Chrome unites with oxygen in three proportions, forming two oxides and one acid. The protoxide is of a green colour, exceedingly infusible by itself, but with borax, or vitreous substances, it melts, and communicates to them a beautiful emerald-green colour. The protoxide is employed at the manufactory of Sevres, in France, to give a fine deep-green to the enamel of porcelain. It is applied without a flux, and melted with the enamel. Chromic acid, however, is the most important of the compounds formed by this metal along with oxygen. It is usually prepared for chemical purposes by mixing solutions of nitrate of barytes and chromate of potash, and digesting the chromate of barytes that is formed in dilute sulphuric acid. This abstracts the barytes, and the chromic acid is procured, by evaporation, in crystals of a fine ruby-red colour. It is very soluble in water, has a sour, metallic taste, and all the characters of a strong acid. It combines with the alkalies, earths and metallic oxides, forming salts, many of which have very rich colours. The alkaline chromates are soluble and crystallizable. They are of a yellow or red colour, the neutral chromates being commonly yellow, and the bi-chromates, red or deep orange. The best known of these is the bi-chromate of potash, which is one of the most splendid, and, at the same time, one of the most useful salts. The manner in which it is formed is as follows:—Chromate of iron, or rather ferruginous oxide of chrome, reduced to fine powder, is mixed with half its weight of nitrate of potash, and heated strongly for an hour or two in crucibles. The resulting masses are then repeatedly digested with water, and the coloured liquids, which are slightly alkaline, saturated with nitric acid, and concentrated by evaporation, till no more crystals of nitre can be obtained from them. The yellow liquid, being now set aside for a week or two, deposits a copious crop of crystals, whose form is that of a four-sided prism, terminated by dihedral summits. Their colour is an intense lemon-yellow, with a slight shade of orange, 100 parts of water at 60° dissolves about forty-eight parts; but boiling water dissolves almost any quantity. Its solution in water decomposes most of the metallic salts; those of mercury, of a fine red; copper and iron, of a reddish brown; silver, dark red, and lead, of a beautiful yellow colour, now much used as a pigment, under the name of *chrome yellow*. Chrome yellow is largely manufactured in the United States, at Baltimore, near which place is found one of the most remarkable deposits of ferruginous oxide of chrome in the world. The process consists in adding a solution of acetate of lead (or sugar of lead) to the rough solution of chromate of potash, from which the nitrate of potash has been just separated by crystallization. The acetate of lead is added as long as any sediment falls. The liquid is then filtered, and the yellow precipitate left on the filters, dried for sale.

CHROMIC ACID. See *Chrome*.

CHRONIC (from χρόνος, time); a term applied to diseases which are of long duration, and mostly without fever. It is used in opposition to the term *acute*, which is applied both to a pungent pain, and to a disease which is attended with violent symptoms, terminates in a few days, and is attended with danger. On the other hand, a *chronic* disease is slow in its progress, and not so generally dangerous.

CHRONICLE, strictly speaking, is a history digested according to the order of time. In this sense, it differs but little from *annals*. The term is mostly used in reference to the old histories of nations, written when they were comparatively rude. Chronicles belong to the sources of history, and many have been handed down from early ages; for instance, the two books of the Chronicles of the Hebrews, which belong to the Old Testament. With many nations, such chronicles were written under the authority of government; and priests, being the only men of learning among uncultivated tribes, were intrusted with this office. In the early Christian ages, also, clergymen were generally the authors of the chronicles; e. g., Eusebius, bishop of Cæsarea, collected from other historical works his Chronicle of ancient history. Hieronymus of Stridon translated it into Latin, in the fourth century, and others continued it. Many historical works of the Byzantines (q. v.) are also chronicles. We might mention, likewise, the Alexandrine chronicle (*Chronicon paschale*), published by Du Fresne; also the chronicles written by monks, particularly by the diligent Benedictines, in the middle ages, some of which embraced the whole history of the world, from its beginning to their own time (as the Chronicle of Rhegino, of Otto of Freisingen, &c.); others, the history of a certain period (as Luitprand's History of his Time, from 891 to 946), or of a single nation (as the History of the Franks, by Gregory of Tours; that of the Lombards, by Paulus Diaconus; the English Chronicles, by Stow, &c.), or the history of single provinces, cities, and institutions (as the Chronicle of the Abbey of St Denis; the Chronicle of Cologne); also the history of individuals (as Eginhard's History of Charlemagne), and of single events. They have been published partly in large collections (for instance, *Scriptores Rerum Germanicarum*), and, until the 13th and 14th centuries, were mostly written in Latin. Of many of them the authors are not known. In this case, they are called after the place where they were written or where they were found.

These chronicles bear the impression of their time, displaying the ignorance and credulity of their authors, and abounding in religious and moral reflections. We must admit, in their favour, however, that they are not filled with political disquisitions and superficial reasoning, of which modern histories afford so many instances. The chronicles of the middle ages were not written with the purpose of supporting certain principles, but generally give simple facts;

on account of which they are preferable, as historical records, to many modern works. Of course, they do not equal in value the result of the deep researches of a Gibbon or a Niebuhr. Young men, in search of historical knowledge, ought to apply themselves more frequently to these sources, and not trust so much to the writers who drew from them; and we can say, from experience, that they would find them very interesting reading. (For information respecting the chronicles of the middle ages, we would refer the reader to the treatises by Rosler, in Latin, particularly the preface to his *Chronica Medii Ævi* (1798), and the directories of Freher and Adelung.) *Chronicle* is also often used as the title of newspapers. The most important of these is the (London) Morning Chronicle, an excellent paper of the whig party. See *Newspaper*.

CHRONODISTICH, CHRONOGRAM; a verse in which certain of the letters used signify Roman numbers, and indicate the year in which the event happened to which the verse relates; e. g., reges ConCeDant paCeM, where CCDCM make the number 1800. It is little used at present.

CHRONOLOGY (compounded of χρόνος, time, and λόγος, discourse) is the art of measuring time (see *Time*), distinguishing its several constituent parts, such as centuries, years, &c., by appropriate marks and characters, and adjusting these parts, in an orderly manner, to past transactions, by means of eras, epochs and cycles, for the illustration of history. The principal means for marking the divisions of time are afforded by the motions of the heavenly bodies, particularly the sun and the moon, which produce the natural division of time into years, months, and days. The necessities of life, requiring still smaller and more precise divisions of time (which can be measured only by artificial means), gave rise to hours, minutes, and seconds. This division of time is called the *artificial*. Even in the natural division, however, there is something arbitrary, as it depends solely on the will what point in the motions of the heavenly bodies shall be taken as the point of beginning; for example, in the annual rotation of the earth, whether we shall take the longest day of summer or the shortest day of winter. The first lawgivers, therefore, fixed the civil beginning and end of the month, day and year, and, at the same time also, the smaller divisions of these larger portions of time. From this separation of the natural and artificial or civil division of time, arises a division of chronology into mathematical, astronomical and historical. Astronomical chronology determines the duration of the natural portions of time by the revolutions of the heavenly bodies; historical chronology treats of the civil divisions of time, of the methods of reckoning time among different nations, of ancient periods or remarkable epochs, &c. It is obvious that each of these divisions of chronology requires the assistance of the others. All historical chronology is grounded on the astronomical, which cannot determine the duration of the periods of time without the aid of the civil division. Mathematicians and astronomers determine the natural periods of time as they are indicated by the motions of the sun and moon. It is left to legislators to determine by law on what day the year shall begin, how many days shall constitute a month, how many a week, &c. This civil regulation is the foundation of the calendar (q. v.) or almanac. Thus far must astronomical chronology be connected with historical; but the latter only can teach us the divisions adopted by different people. Historical chronology explains, 1. the form of the year among different nations, as it is regulated by lawgivers, founders of religions, and other founders of civil society: 2. those events which are selected by different nations as eras, that is, as points from which they begin their reckoning; e. g., the Yugs of the Hindoos, the era of Nabonassar, the era of the Seleucidæ, among the Chaldeans, Syrians, Persians, Egyptians; the creation of the world, among the Jews; the birth of Christ, among Christians; the Olympiads, among the Greeks; the building of Rome and the consular era, among the Romans; the Hegira, or flight of Mohammed, among the Mohammedans, &c. As so many different eras render the reckoning of time difficult, it, 3dly, selects a form of the year and an era to which it refers those of other nations, and by which it arranges the history of all nations and times. The European chronologist and historian must refer the eras and years of all people to those used in modern Europe. Mathematical and astronomical chronology is taught in the manuals of astronomy. Among these may be mentioned the *Astronomie* of Lalande (vol. 1. p. 270, 2d ed.) The Manual of Astronomical and Technical Chronology (from the sources) of D.L. Ideler (vol. 1. Berlin, 1825, vol. 1, 1826) is an excellent work. See also—Hales' Analysis of Chronology; Usher's Annals; Blair's Chronology, and Playfair's Chronology. The most complete work on the subject is the *Art de Verifier les Dates*, by the Benedictines of St Maur.

CHRONOMETER; a time-piece of a peculiar construction, at present much employed by navigators in determining the longitude at sea. In general, chronometers are much larger than common watches, and are hung in gimbals, in boxes six or eight inches square; but there are also many pocket chronometers which, externally, have all the appearance of the better sort of pocket watches, and internally differ from these only in the construction of the balance. The balance and hair-spring are the principal agents in regulating the rate of going in a common watch, being to this what the pendulum is to a common clock; and this spring, in the former, like the pendulum in the latter, is subject to expansions and contractions under different degrees of heat and cold, which, of course, affect the speed or rate of the machine; and the methods of correcting this inaccuracy mark the difference between the watch and chronometer. These are very numerous. (See *Horology*.) All the lines of packets between the United States and Europe have chronometers. See *Clockwork*.

An instrument under the name of *chronometer* is also used by musicians for the accurate measurement of time. Two sorts have been invented for different purposes. The first supplies the motion of a conductor, and regularly beats time. In the British Magazine (ii. 283) may be found an account of a graduated pendulum for this purpose, proposed by Dr Robinson; and others have since been sold at the principal music-shops in London. The second is used by tuners of instruments, to measure the velocity of beats. On this point, the reader may consult doctor Smith's *Harmonics*, p. 210. See *Metronome*.

CHRYSALIS. See *Papilio*.

CHRYSEIS. See *Achilles*.

CHRYSIPPUS, a Stoic philosopher of Cilicia, distinguished for his skill in disputing. He was the principal opposer of the Epicureans, and is said to have written 700 different works, mostly of a dialectical character; but of these no complete work is extant. He died, at a great age, about 206 years B. C.

CHRYSOBERYL, (sometimes called *cymophane*, and, by the jewellers, *Oriental chrysolite*) was for a long time, only known as occurring in semi-transparent, rounded pieces, in the alluvial deposits of rivers, along with other species of gems. Thus, in Brazil, it was found along with the diamond and topaz, and

with rubies and sapphires in Ceylon. Distinct crystals were afterwards brought from Siberia, but their original situation still remains unknown. It is now known to exist, in beautifully distinct crystals, at two places in the United States—at Haddam (Conn.) and Saratoga (N. Y.) They are found at both these localities, in a granitic rock. The form of the crystal is, for the most part, a rectangular prism, and a low six-sided table (with re-entering angles,) formed by the crossing of three prismatic crystals. Chrysoberyl scratches quartz; is of an olive-green colour, and vitreous lustre, and is often possessed of a bluish opalescence. Specific gravity, 3.754. It is composed of alumine 68.66, glucine 16.00, silex 5.99, protoxide of iron 4.73, and oxide of titanium 2.66.

CHRYSOLITE; a greenish, yellowish or brownish stone, sometimes transparent, sometimes only translucent, which possesses the power of double refraction in a high degree. It is composed of silex and magnesia. The chrysolite employed in the arts comes chiefly from the Levant, and is sometimes used in jewellery, but is not highly esteemed. Werner thinks that the yellow chrysolite of the ancients is the modern topaz.

CHRYSOLORAS, Emanuel; a distinguished Greek of Constantinople, born about the middle of the 14th century, the first who, in modern times, transplanted Greek literature into Italy. The emperor John Palæologus sent him, in 1391, to Italy and England, to ask for assistance against the Turks. Having thus become known in Italy, he returned there, about the year 1395, and was appointed professor of Greek literature at Florence. He remained about three years in Florence, where he collected around him a great number of scholars, of all ages and ranks, and excited universal enthusiasm as much by his dignity, and the grace of his elocution, as by the extent of his learning. From his school proceeded Leonardo Bruno, Poggius, Francis Philelphus, and other distinguished revivers of classical studies. He afterwards taught with equal success in Milan, whence the Greek emperor Manuel, who, in 1400, had come to Italy, sent for him to Pavia, Venice, and lastly to Rome. Pope Gregory XII. employed him in public affairs, and sent him, with others, to the council of Constance, where he died in 1415. He should not be confounded with his nephew and companion in Italy, John Chrysoloras.

CHRYSOSTOM, John, St; a celebrated father of the church, born in Antioch, in the year 344. Secundus, his father, had the command of the imperial troops in Syria. In those times, eloquence was still the means of obtaining the highest honours in Greece. Chrysostom studied this art, with Libanius, the most famous orator of his time, and soon excelled his master. After having studied philosophy with Andragathius, he devoted himself to the Holy Scriptures, and determined upon quitting the world, and on consecrating his life to God in the deserts of Syria. At the age of 20, he conducted a legal case with extraordinary success; but he soon retired from public business, and, by fasting and penance, endeavoured to obtain the mastery of his passions. He remained three years in Antioch. He was united, by the ties of an intimate friendship, with Basil, Theodore afterwards bishop of Mopsuesta, and with Maximus, subsequently bishop of Seleucia. Theodore having quitted for a time his holy vocation, Chrysostom wrote two beautiful exhortations, in order to recall him to his duty. The bishops of the provinces had determined on electing him or Basil as bishop; but Chrysostom fled, and concealed himself; consequently Basil was elected, who complained, however, much of his friend's withdrawal. Chrysostom defended himself in his beautiful work on the office of priests. He was then only 26 years old.

In 374, he retired to the anchorites who dwelt on the mountains in the vicinity of Antioch. He described the life which he led with them in the following manner:—"They rise with the first crowing of the cock, or at midnight. After having read psalms and hymns in common, each, in his separate cell, is occupied in reading the Holy Scriptures, or in copying books. Then they proceed to church, and, after mass, return quietly to their habitations. They never speak to each other; their nourishment is bread and salt; some add oil to it, and the invalids vegetables. After meals, they rest a few moments, and then return to their usual occupations. They till the ground, fell wood, make baskets and clothes, and wash the feet of travellers. Their bed is a mat spread on the ground; their dress consists of skins, or cloths made of the hair of goats and camels. They go barefooted, have no property, and never pronounce the words *mine* and *thine*. Undisturbed peace dwells in their habitations, and a cheerfulness scarcely known in the world." After four years, Chrysostom quitted these hermits to seek a still greater seclusion. He dwelt in a cavern, where he remained two years without lying down. His penance and wakefulness, together with the dampness of his abode, threw him into a severe illness, which forced him to return to Antioch (381). In the same year he was appointed deacon by the bishop of Antioch, and, in 386, consecrated priest. He was chosen vicar by the same dignitary, and commissioned to preach the word of God to the people. Till then, the bishops only had instructed the people in the gospel. His eloquence attracted Jews, heathens, and heretics. He was, says Sozomenes, the ornament of his church, and of the whole East, when the Emperor Arcadius determined, in 397, to place him in the Episcopal see of Constantinople. To prevent the inhabitants of Antioch from opposing his intentions, the Emperor caused him to be secretly conveyed to Constantinople, where Theophilus, patriarch of Alexandria, ordained him. He commenced his official labours by limiting the expenses of his house, founded and supported many hospitals, improved the morals of the clergy, and converted a number of heathens and heretics. He gave so generously to the poor, that he was universally called *John the almsgiver*. He devoted himself to attendance on the sick. He sent bishops as missionaries to the Goths, to the Scythians, and to Persia and Palestine. His eloquence twice prevented an insurrection.

In 399, Chrysostom held a council in Constantinople, at which several Asiatic bishops were deposed as guilty of simony. Severin, Bishop of Gabala, in Syria, dared to attack Chrysostom from the pulpit, and to stir up the people against him; but his charges were rejected as calumnies. Chrysostom had two dangerous enemies—the empress Eudoxia, whose injustice and extortions gave cause to many complaints, and Theophilus, patriarch of Alexandria, who was jealous of his influence. The latter assembled several bishops at Chalcedon, who were to investigate the complaints made against Chrysostom. But he refused to appear, alleging that they had acted against the laws of the church; and, on his part, assembled forty bishops at Constantinople. His enemies, however, prevailed. His removal was determined upon, and sanctioned by Arcadius, who banished him from the country. Chrysostom quitted the city secretly, that he might not be prevented by his adherents, and purposed retiring to Bithynia; but the people threatened a revolt. In the following night, an earthquake gave general alarm. In this dilemma, Arcadius recalled his orders, and Eudoxia herself invited Chry-

sostom to return. The people accompanied him triumphantly to the city, his enemies fled, and peace was restored, but only for a short time. A feast, attended with many heathen ceremonies, for the consecration of a statue, given by the empress, roused the zeal of the archbishop, who publicly exclaimed against it; and Eudoxia, violently incensed, recalled the prelates devoted to her will, and Chrysostom was condemned, although forty bishops declared themselves in his favour. Arcadius ordered the soldiers to force him from the church, which was profaned and stained with blood. Pope Innocent I. and the emperor Honorius declared themselves in favour of Chrysostom, but Arcadius refused to assemble the council, on which the others insisted, and commanded Chrysostom peremptorily to retire to the place of his banishment. He obeyed, and was conveyed to Nice, in Bithynia (404). Soon after his departure, the church and the palace where the senate used to assemble became a prey to the flames. Many works of art were lost in this conflagration, which the emperor attributed to the friends of Chrysostom. The Isaurians and Huns laid waste the empire. Chrysostom's return was universally desired; Arcadius remained inflexible. Eudoxia died soon after Chrysostom's banishment, after having fixed upon the little Armenian town Cucusus, in the wilds of Taurus, for his abode. Exhausted by sickness, deprivations, and the fatigues of his journey, he arrived there, and continued to exert his pious zeal. He sent missionaries to Persia and Phœnicia, and wrote seventeen letters to Olympias, all of which are moral dissertations. He likewise addressed to her his work entitled, "None can injure him who does not injure himself." All Christendom beheld the pious sufferer with love and admiration; at which the emperor, exasperated, commanded him to be conveyed to the shores of the Pontus Euxinus, to the town of Pityont, situated on its most distant borders. The officers who had him in charge obliged the old man to perform his journey on foot, with his head uncovered, in the burning heat of the sun; but he fell a prey to exhaustion. In Comana, in Pontus, he was brought to the oratory of the martyr St Basil. He put on white garments, received the eucharist, uttered a fervent prayer, which he closed, as usual, with the words "Praise be to God for all things," crossed himself, and expired (407), sixty-three years old. His body was interred at the side of that of St Basil; but, in 438, it was conveyed solemnly to Constantinople, and there interred in the church of the apostles, in the sepulchre of the emperor. At a later period, his remains were placed in the Vatican at Rome. The Greek church celebrates his feast on the 13th of November, the Roman on the 27th of January.

The name of *Chrysostom* (golden-mouthed) was assigned to him, after his death, to express the eloquence which he possessed in so much greater a degree than the other fathers of the church. He never repeats himself, and is always original. The vivacity and power of his imagination, the force of his logic, his power of arousing the passions, the beauty and accuracy of his comparisons, the neatness and purity of his style, his clearness and sublimity, place him on a level with the most celebrated Greek authors; the Christian Church has not a more accomplished orator. The most accurate Greek edition of his works is that of Henry Saville (1612, 9 vols. fol.); the most complete Greek and Latin, is that of Montfaucon (Paris, 1618, 13 vols. fol.) Professor Neander, at Berlin, has written a biography of this father of the Church, or rather a history of him and his time, entitled *St Chrysostom*, a highly esteemed work, full of the important results of the deep researches of its learned author.

CHUBB, Thomas; a writer in humble life, who obtained great temporary distinction as a controversialist. He was born at East Hadham, near Salisbury, and was instructed only in reading, writing, and accounts He was apprenticed to a glover, but, at length, became journeyman to a tallow-chandler, and employed his leisure in the acquisition of knowledge, from the best English books which he could procure. In 1715, he published The Supremacy of the Father asserted, &c., the perspicuity and argumentative skill of which obtained for it much notice. Of course, a production, assailing a part of the orthodox faith, did not pass without reply, and a controversial warfare commenced, which lasted as long as his life. In 1730, he offered to the world his thoughts on a variety of topics, moral and theological, in thirty-four tracts, collected in a 4to volume, of which book Pope, in a letter to Gay, speaks with great respect. Various publications followed, e. g., A Discourse concerning Reason, The true Gospel of Jesus Christ asserted, Inquiry into the Ground and Foundation of Religion, &c., which manifest his disposition to question many points of orthodoxy. He, however, adhered to the general conclusion, that Jesus was sent from God as an instructer to mankind, and regularly attended public worship at his parish church until his death. Chubb seems never to have sought to emerge from the humble condition in which fortune had placed him, although he met with some powerful patrons. He died suddenly in February, 1747, aged 68.

CHULUCANAS; the name of an ancient ruined city of Peru, on the ridge of the Cordilleras, at the height of 8943 feet above the level of the sea, and on the Paramo of Chulucanas, between the Indian villages of Ayavaca and Guancabamba. Humboldt says, that the great causey of the Incas, lined with free stone—one of the most useful and stupendous works ever executed by man, and which may be compared with the finest Roman roads—is still in good preservation, between Chulucanas, Guamani and Sagique; and Francisco Coreal found it perfect in two other places, and states that it yields in nothing to the most magnificent European road. It runs from Quito, through Cuzco, to La Plata, or from the equator to 20° of S. latitude. On the summit of the Andes, wherever this road passes, ruins of great buildings are every where seen. Humboldt counted nine in less than half a degree of latitude; and Pedro de Cieca de Leon, who wrote in 1541, describes several which he saw in the province of Los Canares. They are now called by the Peruvians, *palaces of the Incas*, but were probably only fortifications to secure the conquests of Quito and Chile.

CHUQUISACA, or LA PLATA; a city of South America, and capital of Bolivia; lat. 19° 40′ S.; lon. 66° 46′ W.; population, 18,000. The inhabitants consist of Indians and Spaniards. It stands on a plain, environed by eminences, which defend it from all winds. The temperature of the air, in summer, is very mild; nor is there any considerable difference throughout the year. The houses have one story besides the ground floor. They are covered with tiles, and are very roomy and convenient, with delightful gardens, planted with European fruit-trees; but water is so scarce as hardly to supply the necessary purposes of life, and is brought from the several public fountains dispersed in the different parts of the city. The town had the name of *La Plata* from its being built near silver mines. It was erected into a bishopric in 1551, the place having then the title of *city*, and, in 1608, was raised to an archbishopric. The cathedral is large, of good architecture, and finely adorned with paintings and gildings. The city has also a university, dedicated to St Francis Xavier, the chairs of which are filled indifferently with secular

clergy or laymen; but the rector was formerly always a Jesuit.

CHUR. See *Coire*.

CHURCH is, in the widest sense of the word, the collective body of those who declare themselves to be followers of Christ. In this sense, the founder of the church is Jesus Christ himself; for, though his followers did not separate themselves from the community of the synagogue until after his death, yet he had, by preaching a doctrine essentially different from Judaism, and by collecting disciples and friends around him, laid the foundation of a new religious body. Moreover, he ordered his disciples, at the time of his departure from the world, to go forth and preach the gospel through the earth, and established two religious ceremonies, by which his followers were to be distinguished. These circumstances, many have thought, must be taken as indicating his intention to found a church. Judaism, too, may be considered as having paved the way for the establishment of a Christian church or organized religious community.

But the word *church* is not so often taken in the sense just described as in a much narrower one, in which it signifies a body of Christians, which differs in doctrines, constitution, and usages from the remainder. From the 11th century, the Greek or Oriental Christians were separated from the Latin Christians, or Christians of the West; and thus originated the difference between the Greek Catholic church, whose chief is the patriarch of Constantinople, and the Roman Catholic church, whose chief is the Romish bishop, or the pope. In the 16th century, the reformation caused another division in the Western church, one part of its members seceding from the government of the Romish see, and adopting different doctrines from those professed by the rest. Thus arose the difference between the Catholic and Protestant churches. It might reasonably be asked, whether some Protestant sects do not differ from each other as much as from the Catholic church; for instance, the Quakers from the English Episcopal church. But, for the purpose of this article, it is sufficient that, in the common use of language, they are all called *Protestants*. There is, moreover, one point which distinguishes all Protestant sects, or the whole Protestant church, from the two Catholic ones, namely, that the Protestants declare the Bible their only ground of belief, and permit it to be freely read and examined into.

In a third sense, the word *church* is sometimes used for the whole Christian community of a country, e. g., the French church, Italian church, &c.

In a fourth sense, this word signifies the building in which Christians assemble for the worship of God. The Christians of the 1st century worshipped in private houses, or in the open air, in remote places, because they were not acknowledged by the state, and were often persecuted. It was not till the 3rd century, that they could venture to give more publicity to their service, and to build churches. Since the 4th century, the churches have become large and magnificent edifices. Such were erected by Constantine and, more particularly, by Theodosius and Justinian. Many heathen temples, also were changed into Christian churches. In the middle ages, many splendid edifices were erected for the performance of divine service, which, in loftiness and grandeur, were never surpassed. Some of the most famous churches at present are St Peter's, at Rome; Notre Dame, at Paris; St Stephen's, at Vienna; the church of Isaac, at St Petersburg; the minsters at Strasburg and Cologne; and St Paul's church, in London. (See *Cathedrals*.) Excepting the last mentioned edifice, Protestantism has produced no very splendid church. In fact, the Protestants, in the construction of their places of worship, seem to have had almost exclusively in view the accommodation of the hearers, particularly in Britain and America. This fact is easily explained from the circumstance that they do not celebrate, in their churches, divine service, in the sense in which the Catholics use the phrase, but chiefly meet to hear the Bible explained to them, and to be instructed in their duties; on account of which the churches of a large portion of Protestants are often, or even usually called *meeting-houses*, and their sermons *discourses*.

In New England, the word *church* is used to denote the members of a religious society, who have made a public profession of the Christian religion, in contradistinction to the other individuals belonging to the same religious society, who have not made such a profession.

There are various derivations of the word *church*, which, of course, has the same origin with the German *kirche*, and the Scottish *kirk*. Some derive it from the Greek κυριακον, from κυριος, lord, a house appropriated for the service of the Lord. Others think the German word is a translation of the Latin *ecclesia*, in which case it would be derived from *kuren*, to elect, and imply the idea of the elect people of God.

CHURCH OF ENGLAND. See *England, Church of*.

CHURCH OF SCOTLAND. See *Scotland, Church of*.

CHURCH, Greek. See *Greek Church*.

CHURCH, Latin, or Western. See *Roman Catholic Church*.

CHURCH, Roman Catholic. See *Roman Catholic Church*.

CHURCH, Fathers of the (*patres ecclesiæ*); teachers and writers of the ancient church, who flourished after the time of the apostles and apostolic fathers (the immediate disciples of the apostles), from the second to the sixth century. This name is also sometimes given to the teachers and writers of the following centuries, down to the schoolmen, who begin with the twelfth century. A large number of their writings have been preserved, and have been published by modern scholars. The knowledge of their lives and their works constitutes a particular science, called *patristics*. The fathers of the church introduced the Greek and Roman learning into Christian treatises, and many of them were as able as they were learned. Most of the earlier fathers of the church, before their conversion to Christianity, were rhetoricians or advocates, which accounts for several peculiarities, as well in their method of disputing as in their style. The object of their writings is to defend the Christian religion and the Christian community, refute the Jews, pagans, and heretics, explain the Holy Scriptures, set forth the doctrines of their faith, and the rules of their morality, also the history of Christianity and the Christian church, and impart instruction to the people. The contents of these writings, therefore, are apologetic, exegetic, dogmatic, moral, historical, polemical, or ascetic. The fathers of the church are divided into two chief classes, Latin and Greek. The most celebrated among the Greek fathers are Clement of Alexandria, the first who philosophized on Christianity; Origen, distinguished for his homilies and his apologetic and exegetic writings; Eusebius, who wrote the first history of Christianity; Athanasius, who had a decided influence upon the formation of the Christian dogmas; and Chrysostom, the most admired of the ancient Christian orators. The most distinguished among the Latin fathers are Tertullian, a writer of great originality; Augustine, a man of a peculiar and vehement mind, the oracle of the

Western church; Ambrose, distinguished as a Christian orator; and Jerome, a man of much learning, and particularly happy in explaining the Holy Scriptures, whose efforts, however, contributed much to awaken in the West an admiration for the renunciation of the world and the celibacy of priests. The fathers of the church are now very much studied by the German Protestants, and many parts of their works have been translated. We do not hesitate to say that they are too little studied in Britain, containing, as they do, great stores of knowledge relating to the early history of Christianity, and elucidating its character. The work of doctor Neander, *Denkwurdigkeiten aus der Geschichte des Christenthums und des Christlichen Lebens* (Berlin, 1825—6), in which great use has been made of the writings of the fathers, affords abundant evidence of their value.

CHURCH MUSIC. See *Music, Sacred.*

CHURCH, States of the; the pope's dominions in Italy. They originated with the grant of Pepin, king of the Franks, in 754, who bestowed on Stephen II., bishop of Rome, some districts, which the Lombards, against whom Stephen II. solicited Pepin's assistance, had taken from the exarchate. Charlemagne confirmed this grant in 774, and, in return, received the title of *Roman emperor* from Leo III., in 800. The suspicious charter of Louis-le-Debonnaire, Otho I., and Henry II., the genuineness of which the papal chamberlain, Marino Marini, has lately (Rome, 1822) endeavoured to establish, are the only proofs of these grants of Pepin and Charlemagne to the popes. The temporal power of the popes over the States of the Church, or the dominion of St Peter, is founded on these documents, of which there only exists a copy, received of the papal chamberlain Cancio, towards the end of the 12th century. The wise policy of the popes, in conferring favours on the Normans in Lower Italy, secured to them, in these vassals, stanch protectors of the holy see. The structure of the papal power was fully completed in 1075, under Gregory VII. The crusades contributed more to promote the views of the popes in the commencement than in the sequel. The dominions of Mathilda (q. v.) were added to the States of the Church, and the popes maintained possession of them against all the claims of the German emperors. The papal chair removed a dangerous neighbour belonging to the house of Hohenstaufen, by raising the house of Anjou to the throne of Naples, in the year 1265. The tyranny of the heads of the church, added to their corrupt life, at last provoked the Romans to opposition, and the popes were obliged to transfer their residence, from 1305 till 1376, to Avignon, which Clement VI. bought of Joanna, queen of Naples and countess of Provence, in 1348. As the choice of the popes made under the influence of the king of France seldom or never obtained the assent of the Romans and Germans, antipopes were elected by the latter, and the welfare of the church, as well as of the state, suffered by their mutual hostilities. The return of the popes to Rome was favourable to the aggrandizement of their power, although the German councils often expressed themselves in bold and independent language. Julius II. added Bologna to the papal dominions in 1513, and Ancona in 1532. The Venetians were obliged to cede Ravenna. Ferrara was wrested from Modena in 1598, and Urbino was bequeathed to the papal chair, in 1626, by its last duke, Francis Maria, of the house of Rovera. At the same time, the popes lost a great part of their temporal and spiritual influence, to the diminution of which the rapid progress of the reformation from the year 1517, greatly contributed. The wise administration of Sixtus V. restored internal order towards the end of the 16th century; but the extravagance and family partialities of his successors created fresh disorder. Clement XIV. was forced to abolish the order of the Jesuits, in 1773. Subsequently, Naples renounced her feudal obligations to the papal chair, and even the journey of Pius VI. to Vienna, in 1782 could not prevent the great changes which Joseph II. was making in the ecclesiastical affairs of his kingdom. After the successes of the French in Italy, the pope was forced, at the peace of Tolentino, Feb. 13, 1797, to cede Avignon to France, and Romagna, Bologna, and Ferrara to the Cisalpine republic. An insurrection in Rome against the French, Dec. 28, 1797, caused the occupation of the city, Feb. 10, 1798, and the annexation of the States of the Church to the Roman republic. Pius VI. died in France. The victories of the Russians and Austrians in Italy favoured the election of pope Pius VII., March 14, 1800, who, under the protection of Austrian troops, took possession of Rome. By the concordat concluded, in 1801, with the first consul of the French republic, the pope again lost a great part of his temporal power. In 1807, the holy father was urged to introduce the *Code Napoleon*, and to declare war against Britain. He refused; and, on the 3d of April, France was declared to be at war with the pope, and the provinces of Ancona, Urbino, Macerate, and Camerino were added to the kingdom of Italy. The possessions of the church beyond the Apennines were all that remained to the pope. (See the correspondence of Pius VII. with Napoleon, in Standlin's *Historical Archives of the States of the Church*, 1 vol., 1815.) Feb. 2, 1808, a French corps of 8000 men entered Rome; the remainder of the papal states were added to France, and a pension of 2,000,000 of francs settled on the pope, whose ecclesiastical power was to continue. The decree of May 17, 1809, at length put an end to the ecclesiastical state. The pope was detained in France until the events of 1814 again permitted him to take possession of his states. See *Pius VII.*

The States of the Church (*Stato della Chiesa*)—17,185 square miles, with 2,460,000 inhabitants, occupying ninety towns, 212 market-places, and 3500 villages—are situated in the centre of Italy, between Lombardy, Tuscany, Naples, and the Tuscan and Adriatic seas. The Apennines (which include the Somma, 6800 ft., and Velino, 7872 ft. high) traverse the country from N.W. to S.E. The rivers are small, with the exception of the Po (which touches the northern boundary, and forms the marshes of Commachio) and its branches. The most considerable is the Tiber, navigable from Perugia. Pope Leo XII. (Genga) reigned from 1823 till Feb. 15, 1829. Pius VIII. (cardinal Castiglione) succeeded him. The revenue is estimated at twelve millions, and the national debt at 200 millions of florins. There is a standing army of 9000 men. The navy consists of two frigates and a few small vessels. The emperor of Austria has the right to garrison the citadel of Ferrara. Internal tranquillity is not yet restored. In 1816 the States of the Church, with the exception of Rome, Tivoli, and Subiaco, which are under the immediate administration of the pope, were divided into seventeen delegations, which, when under the government of cardinals, are called *legations*. Protestants, Greeks, and Jews are tolerated. The religious orders and the Jesuits have been re-established, as was also, in 1826, the university of Urbino. This fertile country is not very well governed. It produces all kinds of corn, the finest fruits, such as oranges, lemons, figs, dates, &c.; a great quantity of oil, good wines, and mulberries, &c. The hills are covered with thick forests; the finest marble is found here; and there are, likewise, traces of various metals; but these advantages are not sufficiently estimated. Mining is not known; agriculture is neglected; but the

breeding of cattle and sheep is more carefully attended to. Manufactures are limited to Rome, Bologna, Ancona, and Norcia. In 1824, 3630 vessels entered the five ports, Rome, Civita Vecchia, Ancio, Terracino, and Ancona, of which 1052 belonged to the papal, and 2267 to the other Italian States. The fair of Sinigaglia is much frequented.

CHURCH, Benjamin, who distinguished himself in the Indian wars of New England, was born at Duxbury, Massachusetts, in 1639. He was one of the most active and indefatigable opponents of the Indian king Philip, and was once very near losing his life, while in pursuit of him. He commanded the party which killed Philip, in August, 1676. In 1704, the spirit of the old warrior was roused by the burning of Deerfield, and he immediately rode 70 miles on horseback, to tender his services to governor Dudley. The offer being accepted, he undertook an expedition against the eastern shore of New England, and inflicted considerable injury upon the French and Indians. The rupture of a blood-vessel, occasioned by a fall from his horse, put an end to his life, Jan. 17, 1718, in the 78th year of his age. He published a narrative of king Philip's war, 1716; and left a character of great integrity and piety.

CHURCHILL, Charles, a poet and satirist of great temporary fame, was the son of the curate of St John's, Westminster, in which parish he was born, in 1731. He was educated at Westminster school, but made so bad a use of his time, that he was refused admission at the university of Oxford, from his want of classical knowledge. He accordingly returned to school, but soon closed his education by an imprudent marriage with a young lady in the neighbourhood. He, however, studied in private, and was at length admitted into holy orders by the bishop of London, and received a Welsh curacy of £30 a year. In order to increase this scanty income, he engaged in the sale of cider, but, being little adapted for trade, soon became insolvent. Returning to London, on the death of his father, he obtained his curacy; but, owing to the smallness of his income, and, most likely, to his fondness for theatrical amusements and the company of the wits of the day, he was soon overwhelmed with debt. A composition with his creditors being effected by the humane mediation of doctor Lloyd, the second master of Westminster school, he began to think of seriously exerting the talents which he was conscious that he possessed. Under the title of the *Rosciad*, a poem, published first in March, 1761, without a name, he examined the excellences and defects of the actors in the two houses in London, with equal spirit, judgment and vivacity. The language and versification too, although sometimes careless and unequal, were far superior to the ordinary strain of current poetry in strength and energy, and the entire production bore the stamp of no common talents. The celebrity of this poem was very great, and the players very weakly increased it by the impatience with which they resented its censures. Pamphlets abounded on both sides of the question; and the author justified himself in a new satire, entitled the *Apology*, in which the profession of a player was treated with humorous contempt. These works made him many enemies, for which he cared very little, as they brought him the far more dangerous intimacy and applause of the men of wit and pleasure about the town. A course of dissipation and intemperance followed, which excited much animadversion, and elicited from him his next satire, entitled *Night*. The Cock-lane imposture, also, formed a topic for his muse, and he hesitated not to satirize doctor Johnson, in the piece entitled the *Ghost*. He next fell in with the national ill humour against the Scots, which originated in the political occurrences of the commencement of the reign of George III. by his *Prophecy of Famine*, a Scottish pastoral, being a most acrimonious, yet strongly-drawn caricature of Scottish disadvantages. This poem was received with great avidity, and he immediately took that rank as a political satirist, which he long maintained, at the expense of candour and decorum, and to the deterioration of both his poetical and moral character. Of the latter, indeed, he now became utterly careless; and, dropping the clerical habit, he parted from his wife, and even distinguished himself in the fashionable art of seduction. Being now a party writer by profession, he cultivated an acquaintance with Mr Wilkes, and employed his pen assiduously in the cause of opposition, and for his own emolument. Besides the works already mentioned, he published, within three or four years, an Epistle to Hogarth, the Conference, the Duellist, the Author, Gotham, the Candidate, the Times, Independence, and the Journey. Most of these pieces contain detached pictures, which display a vigorous fancy and forcible sentiments, expressed with great occasional energy. In versification, Churchill avowedly imitated Dryden; and when he writes with care, he well exemplifies his appreciation of his model; but he wrote too hastily, not to injure his composition by prosaic lines, and he frequently passed off his carelessness for design. Towards the end of the year 1764, he was seized with a fever, and died on the 4th of November, the same year, at the age of thirty-four.

The following sportive, yet just and vigorous estimate of Churchill, we extract from Blackwood's magazine for June, 1828.—"Churchill was a poor, low, unprincipled, vicious, coarse creature, with smartness that sometimes was almost strength; and what to us must in such a person always be a mystery, he had a command over the English language, as far as his mind enabled him to get in it, which made everything he said tell, far beyond its native worth or power, and has secured him no contemptible place among English satirists. His style certainly is pure and idiomatic. He was the terror of pimps and players, and his ghost probably haunted Garrick, although it was hardly worth its while to come up for such a purpose. Let a thing be but well executed,—poor, paltry, and pitiful, as in its own nature it may be,—and it lasts. It is so with the Rosciad. The splendour of that farthing candle burned bright during Garrick's life,—not only illuminating the green-room, but all London, all England; long after his decease, it continued to glimmer away very respectably; and we have heard elderly gentlemen within these twenty years, (one of them lived in Ludlow,) belonging to the school whose day was just wearing out, quote the Rosciad by screeds; lines in it are still recognized when they meet the ear or the eye; and possibly the entire affair may never be, from beginning to end, utterly forgotten as long as there are theatres.

"That Davies has a very pretty wife,"

was reckoned one of the severest and happiest lines ever written, and "ex uno disce omnes." Oh dear! but a little wit goes a long way in this stupid world. Then Churchill had much rancour, and a large spleen, which is always in an inverse ratio to the size of the heart. This gave him spirit for a spurt. But he had no bottom. He was also a coward; and, like a coward, liked to frighten the feeble into fits of fear. Had Hogarth, instead of caricaturing him badly, floored him by a right-handed facer, or lunge in the kidneys, —John Bee is our authority for saying that Hogarth could spar a bit,—Churchill had been cowed, and bit his nail and pen in insolent malice. Why Dr Johnson, whom he libelled as Pomposo, did not break his bones, we cannot conjecture; perhaps because the scamp was a parson: and Samuel had such a respect

for the Church, that he would not even inflict personal chastisement on a blackguard who had once preached from an Episcopalian pulpit. Yet we believe he once threatened to drub Churchill; and probably forbore carrying the threat into execution, because he had attacked Scotland. Some of the lines in his Prophecy of Famine, about the poverty of Scotland, are well turned; but the satire is common-place; and after the first pleasure of surprise arising from the image—images from natural history always please—

"Where half-starved spiders feed on half-starved flies,"

it is felt that such grotesque exaggerations are easy, for once pitch the key, and all the rest of the monotonous strain, called satire, follows of course. Severe as was the state of starvation in which Scotland then pined, the poorest cottar that dug in ditch was better, because more honestly fed, on meal and water, with no milk, and little salt, than this hungry knave bilking his bill in taverns—to-day feasting on ortolans, yesterday tearing tripe, and to-morrow evening an empty trencher; but still, on Saturday and Sunday alike, no better than a thief. Scotland must have been very stupid in those days, not to have settled the hash of such a scribbler—for, after all, he was not much better; and had he lived now, we would have gagged him in a single number, and made him for life a dummy. If any one of his admirers scoff at us for thinking and saying so, why let him play a similar part—put himself into Churchill's shoes—publish a satire on Scotland—and await a month or six weeks for the result. We will so scourge his posteriors with the original of the pretty picture of the Scotch thistle on the cover of the magazine, that he shall not be able to take his seat among the satirists, though with a seven-fold shield of diaculum-plaster. Tarring and feathering would be a joke to our pastime—to have no resting-place for the sole of your foot must be very wearisome indeed; but oh! worse, many million times, to have chairs, and sofas, and ottomans, pressed upon you in all parties, in parlour and dining-room, and yet not to dare to sit down for one moment, in fear of perishing of prickles! The very corpse of such a culprit would need to be laid out on its face. Such, as a satirist, and he was nothing else, was Churchill."

CHURCHILL, JOHN, duke of Marlborough, a distinguished general and statesman, was the son of Sir Winston Churchill, and was born at Ashe, in Devonshire, in 1650. He received his education at home, under a clergyman, from whom he derived little instruction, but imbibed a strong attachment for the church of England. At the age of twelve, he was taken to court, and became page to the duke of York, and, at sixteen, received from him a pair of colours. The first engagement at which he was present was the siege of Tangier, which seems to have decided him in his choice of a profession. On his return, he remained for some time about the court, and, being very handsome, was a great favourite with the ladies there. The king's mistress, the duchess of Cleveland, in particular, was much attached to him, and presented him with £5,000, with which he purchased a life annuity. In 1672, he accompanied the duke of Monmouth, as captain of grenadiers, when the duke went with a body of auxiliaries to the continent, to assist the French against the Dutch. He there fought under the great Turenne, with whom he went by the name of the *handsome Englishman*. At the siege of Maestricht, he distinguished himself so highly as to obtain the public thanks of the king of France. On his return to England, he was made lieutenant-colonel; also gentleman of the bed-chamber and master of the robes to the duke of York, whom, in 1679, he accompanied to the Netherlands, and afterwards, in 1680, to Scotland, where he was much noticed by those who wished to pay their court to the duke. In 1680, he had a regiment of dragoons presented to him, and married Miss Sarah Jennings, a lady of great beauty and good family, an attendant upon the princess, afterwards queen Anne. By this union he materially strengthened his interest at court his lady proving a valuable helpmate in all his schemes for advancement. In 1682, he was shipwrecked, with the duke of York, in their passage to Scotland; on which event he received a great proof of the duke's regard, who used every effort to save him, while many persons of quality perished. In the same year, through the interest of his master, he obtained the title of *baron of Eyemouth*, and a colonelcy in the guards. On the accession of James II., he was sent ambassador to France, and, soon after his return, was created baron Churchill of Sundridge, and, the same year, suppressed the rebellion of the duke of Monmouth. During the remainder of this reign, he acted with great prudence and a strict attention to his own interest, and, on the arrival of the prince of Orange, joined him at Axminster, with the duke of Grafton, and some other officers. His conduct in this affair has been severely censured as ungrateful; but his own apology (and there is no reason to dispute it) was his attachment to the Protestant cause, and the dictates of his conscience. On the accession of William and Mary, in 1689, he was rewarded for his zeal in their cause by the earldom of Marlborough, and appointed commander-in-chief of the English army in the Low Countries. The following year, he served in Ireland, where he reduced Cork, and other places. In 1692, he experienced a great reverse in his sudden dismissal from all his employments, followed by his commitment to the Tower on the charge of high treason. He soon obtained his release; but the evidence against him was never legally produced, and the author of the accusations, then a prisoner, being convicted of perjury, he was entirely acquitted. By the publication of Mr Macpherson's state-papers, however, it appears that the suspicions were not altogether without foundation, and that a correspondence probably existed between the earl of Marlborough and Lord Godolphin, having for its object the restoration of the banished king. However this may have been, during the life of queen Mary, the earl seems to have kept away from court; and, aided by his countess, exerted great influence over the princess Anne, which circumstance, perhaps, prevented his intrigues from being strictly examined.

On the death of queen Mary, he was made a privy counsellor, and appointed governor to the young duke of Gloucester; and, in 1700, was created by king William commander-in-chief of the English forces in Holland, and also ambassador plenipotentiary to the States-General. Still greater honours awaited him on the accession of queen Anne, in 1702, when he was created captain-general of all the forces at home and abroad, and sent plenipotentiary to the Hague, where he was also made captain-general by the States. In the campaign of the same year, he took several strong towns, among which was Liege, for which he received the thanks of both houses, and was created duke of Marlborough, with a pension granted, by the queen, for his life; and, moreover carried a motion for the augmentation of the army, abroad, by taking 10,000 foreign soldiers into British pay. The famous battle of Hochstadt, or Blenheim, was fought on the 2d of August, 1704, between the allied army, commanded by the duke of Marlborough and prince Eugene, and the French and Bavarians, headed by marshal Tallard and the elector of Bavaria. The victory was complete; Tallard was taken prisoner, and the electorate of Bavaria became the prize of the conquerors. The nation testified its gra-

titude to the duke by the gifts of the honour of Woodstock and hundred of Wotton, and erected a palace for him, one of the finest seats in the kingdom. Medals were struck in honour of the event, which Addison also celebrated in his poem of the Campaign. After the next campaign, which was inactive, he visited the courts of Berlin, Hanover, and Venice, and his conciliating manner, great prudence, and perfect command of himself, contributed to render him as successful in his negotiations as in the field. The new emperor, Joseph, invested him with the title of *prince of the empire*, which was accompanied by a present of the principality of Mindelheim. On the victory of Ramillies, a bill was passed to settle his honours upon the male and female issue of his daughters. He next visited the German courts in the alliance, and waited upon Charles XII. of Sweden, then in Saxony. His reception was cold and reserved, yet he had sufficient penetration to perceive that the king would not interfere with the allied powers. In the campaign of 1707, his antagonist was the famous duke de Vendome, over whom he gained no advantage. He was also disappointed in his endeavours to rouse the confederacy into more activity. On his return to England, he found that the duchess was out of favour with the queen; and though he was received with the usual attentions, yet it was evident his popularity at court was on the decline. In 1708, in conjunction with prince Eugene, he gained the battle of Oudenard, and pushed the victory so far, that the French king entered into a negotiation for peace, which was of no effect. In 1709, he defeated marshal Villars at Malplaquet; but this action was attended with great slaughter on both sides, the allies losing 18,000 men, which loss was but ill repaid by the capture of Mons. The prevalence of the tories in England rendered the French war unpopular, and the preaching and prosecution of Sacheverel created a sensation unfavourable to its continuance. On the next visit of the duke to England, he found that the duchess, by her great arrogance, had so disgusted the queen that a total breach had ensued; and though he was still received with public honours, he could by no means boast of his former influence. Early in 1710, he returned to the army, and with prince Eugene, gained another victory over Villars, and took the towns of Douay, Aire, and St Venant. During his absence, a new ministry was chosen, composed of men hostile to him and his views, and, on his return, he was consequently expected to resign; but this he would not do, and dissembling his indignation, again repaired to the field, and signalized himself by the capture of Bouchain. Finding that he would not resign his command, it was taken from him; and a prosecution was even commenced against him for applying the public money to private purposes. Disgusted by this gross ingratitude, he repaired to the Low Countries, where he was received with the greatest honour. He returned a short time before the queen's death, and, on the accession of George I., was restored to favour and reinstated in the supreme military command. The last public transaction in which he took a part was the defeat of the rebellion, in 1715, in which his advice was taken. Retiring from all public employments, his mental faculties gradually decayed, and falling into second childhood, he died at Windsor Lodge, in 1722, in the 73d year of his age, leaving four daughters, who married into families of the first distinction.

He was rather a man of solid sense than of genius, and was gifted with great coolness and self-possession. He was not even moderately conversant in literature, but so well versed in all courtly arts, that he always acquitted himself with honour in the delicate negotiations in which he was employed. His proficiency in the graces is said by lord Chesterfield to have been the chief cause of these successes. But his fame rests chiefly upon his military talents, of which he gave most illustrious proofs. As regards his morals, he seems to have been much guided by interest; and it does not appear that he ever ceased intriguing with the Stuart family, whose restoration seemed at one time far from improbable. Neither does his connexion with the whigs appear to have been sincere, for, according to Macpherson, he held a correspondence with lord Bolingbroke, hoping to be restored to power through the influence of the tory ministry. His avarice was equally notorious with his ambition; yet it does not appear that he ever made an unjust use of his ascendency. His political enemy, the celebrated earl of Peterborough, pronounced his eulogy in these words: "He was so great a man that I have forgotten his faults"—a sentence which, upon the whole, tolerably well conveys the judgment of posterity. His duchess has been almost equally celebrated for her boundless ambition and avarice. She died in 1744, having amassed immense riches. She presented Mr Hooke with £5,000 to write a book, entitled *An Account of the Conduct of the Dowager Duchess of Marlborough*. and bequeathed £500 to Mallet to write the life of the duke! In 1788, a selection of curious papers was published by lord Hailes, under the title of *The Opinions of Sarah Duchess of Marlborough*. The duchess was the *Atossa* in Pope's Satire on Women.

CHURCH-YARD. See *Burying-Places* and *Cemetery*.

CHYLE. See *Chyme*.

CHYME, in animal economy. In the process of digestion, the food is subjected to a temperature usually above 90° of Fahrenheit. It is mixed with the gastric juice, a liquor secreted by the glands of the stomach, and is made to undergo a moderate and alternate pressure, by the contraction of the stomach itself. It is thus converted into a soft, uniform mass, of a grayish colour, in which the previous texture or nature of the aliment can be no longer distinguished. The *chyme*, as this pulpy mass into which the food in the stomach is resolved is termed, passes by the pylorus into the intestinal canal, where it is mixed with the pancreatic juice and the bile, and is still exposed to the same temperature and alternating pressure. The thinner parts of it are absorbed by the slender tubes termed the *lacteals*. The liquor thus absorbed is of a white colour; it passes through the glands of the mesentery, and is at length conveyed by the thoracic duct in the blood. This part of the process is termed *chylification*, and the white liquor thus formed, *chyle*. It is an opaque, milky fluid, mild to the taste. By standing for some time, one part of it coagulates; another portion is coagulated by heat. The chyle, after mixing with the lymph conveyed by the absorbent vessels, is received into the blood, which has returned from the extreme vessels, before this passes to the heart. All traces of it are very soon lost in the blood, as it mixes perfectly with that fluid. It is probable, however, that its nature is not immediately completely altered. The blood passing from the heart is conveyed to the lungs, where it circulates over a very extensive surface presented to the atmospheric air, with the intervention of a very thin membrane, which does not prevent their mutual action. During this circulation, the blood loses a considerable quantity of carbon, part of which, it is probable, is derived from the imperfectly assimilated chyle, as this originating in part from vegetable matter, must contain carbon in larger proportion than even the blood itself.

CIBBER, Colley, a dramatic writer and actor, was born in London, 1671, served under the duke of

Devonshire, in the revolution which placed the prince of Orange on the throne, and then made his appearance at Drury-lane theatre. He was not at first very successful; but at length, the talent which he displayed in the character of Fondlewife, in the Old Bachelor of Congreve, brought him into notice. In 1695, appeared his first comedy, Love's last Shift, which met with great success. In this piece, he played the part of Novelty, a fashionable fop. This character is found in most of his pieces, and in the representation of it he was likewise distinguished. His dramatic celebrity is founded chiefly on the Careless Husband, which even obtained the approbation of his declared enemy, Pope. This piece is, indeed, without novelty in the characters, and without invention in the plot, but it is a good picture of the manners and follies of the time. His comedy, the Nonjuror, an imitation of *Tartuffe*, adapted to English manners, appeared in 1717, and was directed against the Jacobites. It was very successful, and procured him a pension from the court, but drew upon him many enemies, whose number he increased by his conduct as director of Drury-lane theatre, from 1711. His appointment as poet-laureate, 1730, gave full play to the raillery of his enemies. Cibber had the good sense to join in the laugh against his own verses, and thus to disarm them. Pope, however, did not cease to ridicule him on every opportunity. In 1750, he quitted the theatre, and published the Apology for the Life of Colley Cibber, &c., written with spirit and candour, and containing many entertaining anecdotes and judicious remarks. He died in 1757.

CIBBER, Theophilus, son of the subject of the preceding article, was born in 1703, and embraced the profession of an actor. With respect to personal appearance, nature had been less favourable to him than to his father; but his intelligence and vivacity in his performances compensated for his deficiencies, and he would have been successful on the stage if his extravagance had not continually involved him in difficulties. He was engaged, 1757, to play at a Dublin theatre, but was shipwrecked on his passage, and drowned. The Biography of English and Irish Poets, which appeared under his name, was from the pen of Robert Shiels, a Scotsman, who purchased for 10 guineas, the right of prefixing to the work the name of Cibber, then in prison for debt.—Cibber's wife, Susanna Maria, born 1716, was one of the best actresses on the English stage. She was sister of the celebrated doctor Arne (composer of Rule Britannia), who taught her music, and introduced her in one of his operas, at the Haymarket theatre. In 1734, she married Theophilus Cibber, but was soon after separated from him. She subsequently made her appearance in tragedy. Her beauty and her talents gained her universal admiration. She died in 1766.

CIBORIUM; originally, a drinking-vessel made from an Egyptian plant. In the Roman Church, it is the vessel in which the consecrated host (the *venerabile*) is preserved.

CICADA. See *Grasshopper*.

CICERO, Marcus Tullius. This celebrated Roman was born in the year of Rome 647 (106 B. C.), at Arpinum. His family belonged to the order of *equites*, but had always kept themselves aloof from public business and office. His father, who lived in retirement, devoted to science, was the friend of the first citizens of the republic. Amongst this number was the celebrated orator Crassus, who himself attended to the education of the young Cicero and his brother Quintus, selected teachers for them, and directed their studies. The perusal of the Greek authors, together with poetry, oratory and philosophy, occupied the first years of Cicero's youth. He wrote a great deal in Greek. His versification was good, but his poetical merits on the whole, only moderate. His destination was, to be the first orator of Rome. In his youth, he made one campaign under Sylla, in the Marsic war. After his return, he availed himself of the instruction of the academician Philo, and of the celebrated orator Molo, and employed several years in acquiring the knowledge requisite for an orator. He witnessed the barbarities of Marius and Cinna, and the proscriptions of Sylla, after which the exhausted, blood-stained republic remained undisturbed under the yoke of its dictator. Cicero, at that time twenty-six years old, endowed with knowledge and genius, appeared before the tribunals, at first in civil suits, afterwards in a criminal process, in which he defended Roscius Amerinus, who was accused of parricide by Chrysogonus, a freedman of Sylla. He conducted this defence with courage, confuted the accusers, and obliged the judges to acquit the accused. After this brilliant display, he remained a year in Rome, and undertook another suit. His conduct, in both instances must have displeased the dictator. But his debilitated health obliged him to travel; and he went to Athens, which was still the centre of science. Here he resided in the house of an academician, was visited by the philosophers of all the schools, and profited by the instruction of the masters of oratory. Thus he passed six months with his friend Atticus, in the enjoyment of literary pursuits. His initiation into the mysteries of Eleusis is supposed to have taken place about this time. He also undertook a journey to Asia, and remained some time at Rhodes, where he likewise visited the most distinguished orators, and partook in their exercises. On his return to Rome, his displays of eloquence proved the value of his Grecian instruction. Among others, he defended the celebrated actor Roscius, his friend, and master in the art of elocution. At last, at the age of thirty, he engaged in public business. He became questor of Sicily, during the prevalence of a great scarcity at Rome, and managed to convey a large quantity of corn from thence to the capital, though it was difficult for him so to do without exciting the displeasure of the Sicilians. He afterwards returned to Rome, and appeared as an orator, defending the causes of private individuals, merely for the sake of fame. It was an honourable day for Cicero, when the ambassadors from Sicily appeared before him, with the request that he would conduct their suit against their governor Verres. He showed himself worthy of the confidence of an oppressed people, and appeared against this powerful robber, after having himself collected proofs of his crimes in Sicily. He was opposed by the celebrated Hortensius. The crimes of Verres are painted in the liveliest colours in his immortal speeches. Seven are preserved, but only two of them were delivered. Hortensius was struck dumb by the force of truth, and Verres went into voluntary exile. After this suit, Cicero was elected to the office of edile. Though possessed of only a moderate fortune, he managed, by well-timed liberality, to gain the affections of the people whilst he held this office. But, for the execution of his plans, he was likewise in need of the friendship of the great, to obtain which he joined the party of Pompey, the head of the nobility and the first citizens of Rome. He became his panegyrist and most zealous adherent.

Catiline at that time began to plan his conspiracy against the republic. He was accused of extortion in his government of Africa, and Cicero was on the point of undertaking his defence, when they became rivals, being both candidates for the consulship. Cicero's merit prevailed over Catiline's intrigues and the envy of his enemies. He was chosen consul unanimously; and now commences the most splen-

did period of his political life. He succeeded in defeating the conspiracy of Catiline (q. v.). At the same time, he conducted a private suit, in a masterly speech defending Murena, consul elect for the ensuing year, against the accusations of the stoic Cato. After Catiline's fall, the Romans greeted Cicero as the father of his country. But a factious tribune would not consent to his rendering an account of his administration; and, on retiring from the consulate, Cicero was only able to pronounce the celebrated oath "I swear that I have saved the republic." Cæsar was always his opponent, and Pompey feared a citizen who loved liberty too much to be favourable to the triumvirs. Cicero saw his credit gradually decreasing, and even his safety threatened. He therefore occupied himself more than ever with science, wrote the history of his consulate, in Greek, and composed a Latin poem on the same subject, in three books. At last the storm broke out. Clodius, Cicero's enemy, caused a law to be renewed, declaring every one guilty of treason, who commanded the execution of a Roman citizen before the people had condemned him. The illustrious ex-consul put on mourning, and appeared, accompanied by the *equites* and many young patricians, demanding the protection of the people. Clodius, at the head of armed adherents, insulted them repeatedly, and ventured even to besiege the senate. Cicero, upon this, went into voluntary exile, travelled through Italy, and ultimately took refuge in Thessalonica, with Plancus. Clodius, in the mean time, procured new decrees, in consequence of which Cicero's country-seats were torn down, and a temple of freedom built on the site of his house at Rome. Cicero's wife and children were exposed to ill treatment.

Whilst the accounts of these occurrences drove the unhappy man almost to despair, a change favourable to him was preparing in Rome. The audacity of Clodius became equally insupportable to all. Pompey encouraged Cicero's friends to get him recalled to Rome. The senate declared that it would not attend to any business until the decree which ordered his banishment was revoked. Through the zeal of the consul Lentulus, and at the proposition of several tribunes, the decree of recall passed the assembly of the people, in the following year, in spite of a bloody tumult, in which Cicero's brother Quintus was dangerously wounded. In this honourable manner Cicero returned, after an absence of ten months. The assembled senate received him at the gates of the city, and his entry resembled a triumph. The republic undertook the charge of rebuilding his houses. From this period, a new epoch commences in Cicero's life. His republican zeal diminished in proportion as his attachment to Pompey increased, whom he declared his benefactor. Clodius opposed with arms the rebuilding of Cicero's houses, and often attacked him personally. Milo repelled his attacks, and accused him, at the same time, before the tribunal. Rome became frequently a field of battle. Cicero, meanwhile, passed several years with little public employment, occupied with his rhetorical works. To oblige Pompey, he defended Vatinius and Gabinius, two citizens of bad character, who had shown themselves his implacable enemies. At the age of fifty-four, he entered the college of the augurs. The death of the turbulent Clodius, who was slain by Milo, delivered him from his most dangerous opponent. He defended the perpetrator of this act, who was his friend and avenger, in a beautiful speech; but the presence of Pompey's soldiers, and the tumult of the friends of Clodius, confused him whilst delivering it. At this period, the senate appointed him governor of Cilicia. Cicero conducted a war, while in this office, with good success, repulsed the Parthians, and was greeted by the soldiers with the title of *imperator*. But he was not allowed the honour of a triumph. As soon as his term of office had expired he returned to Rome, which was threatened with serious disturbances, owing to the rupture between Cæsar and Pompey. Dreading the horrors of a civil war, he endeavoured in vain to reconcile the rivals. Cæsar advanced towards Rome, and Pompey was forced to fly with the consuls and the senate. Cicero, not anticipating this sudden approach of Cæsar, was still in Italy. Cæsar saw him at Formiæ, but was not able to gain him over; for, although convinced that the party of Cæsar was likely to prevail, and although his son-in-law, Dolabella, was one of Cæsar's confidants, he was prompted by his sense of honour to return to Pompey. After the battle of Pharsalia and the flight of Pompey, he refused to take the command of some troops who had remained at Dyrrhachium, but returned to Italy, which was governed by Cæsar's representative, Antony. This return was attended with several unpleasant circumstances, until the conqueror wrote to him, and soon after received him graciously.

Cicero now devoted himself entirely to literature and philosophy. He was divorced from his wife Terentia, to enable him to marry a beautiful and rich heiress, whose guardian he was. But the pecuniary considerations which induced him to take this step could never prevail on him to flatter power: on the contrary, he purposely kept aloof, and ridiculed the flatterers of Cæsar, priding himself on his panegyric of Cato. But his disaffection was overcome by the liberality of Cæsar, when he pardoned Marcellus. Enraptured by this act of favour, which restored his friend to him, Cicero broke silence, and delivered a famous oration, which contained as much instruction as panegyric for the dictator. Soon after, he spoke in defence of Ligarius, and Cæsar, relenting, gave up his purpose of condemning the accused to death. Cicero now regained a part of his former consideration, when the death of his daughter Tullia occurred, and affected him very painfully. The assassination of Cæsar opened a new career to the orator. He hoped to regain great political influence. The conspirators shared with him the honour of an enterprise in which no part had been assigned him; and the less he had contributed to it himself, the more anxious was he to justify the deed, and pursue the advantages which it offered. But Antony took Cæsar's place. Even in this turbulent year, Cicero found leisure for literary occupations, and, among other labours, completed his work *De Gloria*, which was lost as late as the fourteenth century. He determined on going to Greece, where he could live in safety; but he soon returned to Rome, and composed those admirable orations against Antony, which are known to us by the name of *Philippics*, and which are equally distinguished for eloquence and patriotism. His implacable enmity towards Antony induced him to favour young Octavius, although the pretended moderation of the latter did not deceive him. With him originated all the energetic resolutions of the senate in favour of the war which the consuls and the young Cæsar were conducting, in the name of the republic, against Antony. Octavius having possessed himself of the consulate, and formed an alliance with Antony and Lepidus, after the death of the two consuls the power of the senate and of the orator yielded to the arms of the triumvirs. Cicero, who had always spared Octavius, and even proposed to Brutus to be reconciled with him, was at last convinced that liberty was at an end. At Tusculum, whither he had retired with his brother and nephew, he learned that his name, at Antony's demand, had been added to the list of the proscribed. He repaired, in a state of indecision,

to the sea-coast, and embarked. Contrary winds drove him back to the shore. At the request of his slaves, he embarked a second time, but soon returned again to await his fate at his country-seat near Formiæ. "I will die," exclaimed he, "in my country, which I have more than once saved." His slaves, seeing the neighbourhood already disturbed by the soldiers of the triumvirs, endeavoured to convey him away in a litter, but soon discovered the murderers at their heels. They prepared for combat; but Cicero, who felt that death was unavoidable, ordered them to make no resistance, bent his head before Popilius, the commander of the murderers, who had once been saved by his eloquence, and suffered death more courageously than he had borne misfortune. He died in his sixty-fourth year, A. U. C. 711 (B. C. 43). His head and hands were, by the orders of Antony, affixed to the same rostrum from which the orator, as Livy says, had poured forth eloquence unequalled by any human voice. Cicero merited the character which Augustus gave him in these words: "He was a good citizen, who loved his country sincerely." He was (particularly considering the spirit of his times) a virtuous man, for his faults were only weaknesses of character, not vices, and he always pursued good for its own sake, or (what, if a fault, is easily forgiven) for the sake of fame. His heart was open to all noble impressions, to all great and fine feelings, to patriotism, friendship, gratitude, and love of science.

Cicero's eloquence has always remained a model. After the revival of learning, he was the most admired of the ancient writers; and the purity and elegance of his style will always place him in the first rank of Roman classics. The style of his philosophical writings, without oratorical ostentation, breathes the pure Attic elegance which some of his contemporaries wished also to see in his orations. The orator is seen, however, in his prolix and comparatively unanimated dialogues. His philosophical works, the principal part of the contents of which is taken from the Greek, and which combine academic and stoic doctrines and principles, possess very unequal interest for us. Thus, for example, his work *De Natura Deorum* is, for us, only a collection of errors: the *Tusculanæ Quæstiones* are full of the subtilties of the Athenian school: his work *De Finibus Bonorum et Malorum* likewise belongs to this somewhat dry, dogmatic philosophy. On the other hand, his works on practical morals have maintained their full value. The book *De Officiis* is to this day the finest treatise on virtue, inspired by pure human wisdom. The pleasures of friendship and old age have likewise been excellently set forth in Cicero's *De Amicitia* and *De Senectute*. Of his political work *De Republica*, a considerable part was brought to light by Maio, and published in Rome in 1822. Cicero wrote the six books *De Rep.* in his fifty-fourth year. In these he endeavoured to show by what policy, what resources, and what morals, Rome had obtained the dominion of the world. Steinacker published these fragments at Leipsic, in 1823. Villemain translated and explained them (Paris, 1823). The work has also been translated in the United States (New York, 1829). Professor Gust. Munnich, in Cracow, gives an account of the Sarmatian copy of Cicero *De Rep.*, which, in 1581, was in the possession of a Volhynian nobleman, and has since disappeared, in his work, *M. Tull. Ciceronis Libri De Republica notit. Codicis Sarmat.* (Gottingen, 1825.) According to him, Goslicki used this copy in his work *De Perfecto Senatore*. Cicero's works *De Divinatione* and *De Legibus* are instructive monuments of antiquity. The same philosophical spirit is evident in all his oratorical treatises, particularly in the most important of them, *De Oratore*, although this contains as little of utility for us as the *Claris Oratoribus*, *Topicis*, *De Partitione Oratoria*, &c. The most interesting of all Cicero's works, for posterity, are his *Epistolæ familiares* and *Ad Atticum*, which give a more exact and lively idea of the state of the republic than any of his other works, and display most strongly the characteristic traits of the author. They are translated, in a masterly style, by Wieland. The life of Cicero was written, of old, by Plutarch, and has been also, in modern times, by Middleton and Morabin. In the publication and explanation of his works, Paulus and Aldus Manutius Lambinus, the two Gruters, the two Gronovii, &c., have distinguished themselves. We possess late editions of his entire works, by J. A. Ernesti, Beck and Schutz. Cicero's life, interesting on many accounts, is particularly so to the historical politician, as showing the consequences of the deplorable state of the Roman republic, in the case of so distinguished an individual, as well as the impossibility of preserving its liberty. Cato, Cicero, and some others, were worthy of having lived in a better age of the republic, to the corruption of which they fell martyrs.—In 1828 appeared a highly important work, edited by Maio (q. v.), *Classicorum Auctorum e Vaticanis Codicibus Editorum: Tomus I et II, curante Angelo Majo, Vaticanæ Bibliothecæ Præfecto. Romæ, Typis Vaticanis*, 1828, 8vo. The second volume contains all the fragments of Cicero's orations which have been discovered by Maio, Niebuhr and Peyron.

CICERONE; the title of the person who, in Italy, and particularly in Rome, shows and explains to strangers curiosities and antiquities. The talkativeness of such persons has procured them the name *cicerone*, in jocular allusion to Cicero. A good cicerone must possess extensive and accurate information; and several distinguished archæologists have pursued this business, as it gives them an opportunity, while serving others, to make repeated examinations of the works of art, and thus to become continually more familiar with them. Signore Nibbi is the most distinguished cicerone. He explains antiquities on the spot, in Rome, in a very interesting manner.

CICISBEO; a name given, since the 17th century, in Italy, to the professed gallant of a married lady. It is the fashion, among the higher ranks in Italy, for the husband, from the day of marriage, to associate with his wife in his own house only. In society, or places of public amusement, she is accompanied by the *cicisbeo*, who even attends at her toilet, to receive her command for the day. This custom is the more extraordinary, from the natural jealousy of the Italian, who seems to change his character completely after marriage. Father Barri has made the *Cicisbeatura* the subject of a moral work, and divides it into *larga* and *stretta;* the first kind he thinks pardonable, but the latter he regards with repugnance. This custom is much on the decline in Italy

CICUTA. The cicuta, or common hemlock (*conium maculatum*), is a plant indigenous in most temperate climates, and is found commonly along walls and fences, and about old ruins and buildings. It is an annual plant, of four or five feet in height, having very fine double pinnate leaves, of a pale-green colour, and bearing flowers of a greenish-white, in large, flat heads. It was first introduced in medicine, together with other vegetables of the same kind, by baron Storck of Vienna. The most common form in which it is administered, is the extract, which is given in pills. Of this, from twelve to sixty grains per day may be taken for a long time. It was considered invaluable in all chronic inflammations, and enlargements of glandular parts, as the liver, the womb, &c., but its use has now been greatly superseded by mercury and other medicines. Its green leaves, stirred

into a soft poultice, form an excellent application for painful sores and ulcers; and the same leaves, dried and rubbed fine, make, when mixed with cerate or lard, a capital ointment for irritable sores, with which a poultice does not agree.

CID. Don Rodrigo (Ruy) Diaz, count of Bivar, surnamed the *Cid*, born in 1026, the model of the heroic virtues of his age, and the flower of Spanish chivalry, styled by his enemies (the ambassadors of the Moorish kings) *el mio Cid* (my lord), and by his king and countrymen *Campeador* (hero without an equal), continues to live in the poetry of his country. We were made acquainted with the history of his life by the play of the great Corneille. Rodrigo loved and was beloved by Ximene, daughter of Lozano, count of Gormaz, who, with Diego, the father of Rodrigo, excelled all the knights at the court of Ferdinand I. of Castile. The envy of Gormaz at Diego's superior estimation at court produced a dispute between the two, which led to a duel. Gormaz vanquished the old Diego, and, insult being added to this disgrace, Diego demanded from his son the blood of the offender. In the contest between honour and love, the former prevailed in the breast of the youth, and Gormaz fell. Ximene, unfortunate as a daughter and a mistress, could no longer listen to the voice of love: it became necessary for her to demand vengeance on the object of her affections, and Rodrigo would willingly have rushed to the combat, if by so doing he could have alleviated the torments of a lacerated heart. But no champion was found to meet the young hero; and nothing but the discharge of the important duties which devolved upon him could preserve him from sinking under his despair. Five Moorish kings appeared in Castile: devastation and death accompanied their progress. Rodrigo, who was not yet twenty years of age, threw himself upon his noble horse Babieca, and, at the head of his vassals, went to meet the enemy, who soon ceased to be the terror of the country. The young hero sent the five captive kings to Ferdinand, who, as a reward for his bravery, gave him Ximene, and united those whom the decrees of fate seemed to have separated forever. They were married in Valencia. Ferdinand afterwards added Galicia, Leon and Oviedo to Castile, and posterity calls him the *Great;* but it was Rodrigo who gained him the name. A quarrel having arisen between Ferdinand and king Ramiro of Arragon concerning the possession of Calahorra, the latter challenged him to a single combat, and appointed for his substitute the knight Martin Gonzalez. Ferdinand chose the Cid for his champion, and, by his means, obtained Calahorra. Ferdinand, in his will, divided his dominions among his sons: to Sancho he gave Castile, to Alfonso he gave Leon and Oviedo, and to Garcia, Galicia, together with the conquered part of Portugal. This division caused a war between the brothers, in which Sancho was victorious: this success was owing to the Cid, to whom he had given the command of his forces. Alfonso was taken prisoner, Garcia brought ruin upon himself by his own imprudence, and it remained only to overcome the obstinate resistance of Zamora, where Sancho's sister Urraca ruled. Before the walls of this city Sancho was assassinated, and Alfonso, who, eight months before, was vanquished by the Cid, was called to the throne. It is related, in the ballads, that the Cid read the oath of purification, in the name of the states of Castile, before the new king, on account of the murder of Sancho, with such impressive solemnity, that Alfonso shuddered, but was also offended. It is certain that he spared nothing to gain over the Cid.

The story of this warrior requires a critical examination, especially what relates to his marriage. According to history, Alfonso married him to donna Ximene, his niece (in 1074); and consequently it seems we must consider him twice married. John von Muller, the German historian, supposes that the daughter of the proud Gormaz may have been his first Ximene. However that may be, it is certain that the Cid, notwithstanding the important services which he rendered to his king, often experienced the inconstancy of royal favour. A man like him, of strict integrity and virtue, of an inflexible and lofty spirit, who despised an effeminate life, was not fitted for courts. His true friend and brother in arms, Alvaro Hanez Minaya, his wife and child, were his world. The gravity of his countenance excited respect and reverence; his retired life afforded room for the slanders of the courtiers; and he was exposed to frequent reproaches. But, in times of necessity, his assistance was again sought, and he was too generous to remember past offences. The king finally took from him all that he had given him, wife and treasures; but, from shame or fear, he afterwards restored Ximene. Disgraced, plundered, forced to depend on himself alone, Rodrigo was now happier and greater than before. Ever true to his country and his religion, he raised an army by the reputation of his name alone, to subdue the Moors in Valencia In the midst of his career of conquest, he hastened to the assistance of his king, who was hard pressed by Joseph, the founder of Morocco; but the only return of his generosity was new ingratitude. He therefore departed by night, with his most trusty followers, and, forsaken and ill provided, fled from the king. He, however, remained true to himself, and fortune to him. His magnanimity again overcame the king. Permission was given to all to join the forces of the Cid, who still maintained the cause of Spain, and always with distinguished success. Alfonso declared aloud, in the presence of the envious courtiers, "This Cid serves me much better than you," and could no longer be prevented from visiting him. From this time, he was never estranged from him, although he unintentionally promoted the machinations of his enemies. Two brothers, counts of Carrion, had resolved by a marriage with the daughters of the Cid, to obtain possession of his wealth. The king himself promoted their suit, and the Cid yielded to his wishes. With donna Elvira and donna Sol, they received likewise the great treasures which the arms of the Cid had won. But scarcely had they dismissed their attendants, when, in a wild, mountainous desert, they stripped the garments from the persons of the ladies, bound and beat them till pain choked their cries, and departed with the money. A trusty servant, whom the Cid had sent after them, delivered the ladies from their wretched situation, and the vile deed was brought to light. The Cid demanded justice. Alfonso summoned all the vassals of Leon and Castile to a high court of justice at the city of Toledo. The Cid demanded the restoration of his treasures, and opportunity to take vengeance for the insult, by a combat between the counts of Carrion and the champions whom he should name. They sought to avoid the combat, but the king insisted on it. With ill-concealed fear, they rode to the lists; the knights of the Cid overcame both them and their uncle; their dishonoured lives were spared. The last exploit of the Cid was the capture of Saguntum (Murviedro), after which he died at Valencia, in the seventy fourth year of his age (1099). What this hero won, and for many years defended, the united power of Leon and Castile was scarcely able to preserve against the encroachments of the infidels. His widow, therefore, went with the dead body of the hero to Castile. He was buried at the convent of St Peter of Gardena, in

a tomb which was honoured by emperors and kings. There rests the noble Ximene, and under the trees before the convent lies the faithful horse Babieca.

The adventures of the Cid, particularly his banishment and return are the subjects of the oldest Castilian poem, probably composed at the end of the twelfth century, *Poema del Cid el Campeador*, which was published in the *Coleccion de Poesias Castellanas anteriores a Siglo XV.*, of Sanchez, in 1775, and has been reprinted in Schubert's *Biblioteica Castellana Portugues y Provenzal*. The latter ballads, which commemorate the hero, were at the beginning of the sixteenth century, collected by Fernando del Castillo, and, in 1614, again published by Pedro de Florez in the *Romancero General*. There has also been published a collection by Escobar—*Historia del muy noble y valeroso Caballero el Cid Ruy Diaz, en Romances* (Lisbon, 1615; Seville, 1632). A great number have been published in the Collection of the best Ancient Spanish Historical, Chivalrous and Moorish Poems, by Depping (Altenburg and Leipsic, 1817). There are, in all, above a hundred of these ballads extant. Herder in his beautiful *Cid* (Tubingen, 1806), has translated into German seventy of these ballads (probably some of the collection of Escobar). John von Muller has written the life of the Cid (in the eighth volume of his works) from Spanish sources, mostly from an old chronicle printed in Risco's *Historia del Cid* (Madrid, 1792). Whatever chronicles and songs have conveyed to us of the history of the Cid, is collected in the Chronicle of the Cid, from the Spanish, by Robert Southey (London, 1808, 4to).

CIDER; a liquor made from the juice of apples. The quality of this popular beverage depends principally on the following particulars, viz. 1. kind of fruit; 2. condition of the fruit when ground; 3. manner of grinding and pressing; 4. method of conducting the requisite fermentation, and precautions to be taken against its excess.

1. The characteristics of a good cider apple (according to Mr Buel of Albany) are, a red skin, yellow and often tough and fibrous pulp, astringency, dryness, and ripeness at the cider-making season. Mr Knight, a famous English horticulturist, asserts, that, "when the rind and pulp are green, the cider will always be thin, weak, and colourless; and when these are deeply tinged with yellow, it will, however manufactured, or in whatever soil the fruit may have grown, almost always possess colour and either strength or richness." It is observed by Crocker, in his tract on The Art of making and managing Cider, that the most certain indications of the ripeness of apples are the fragrance of their smell, and their spontaneously dropping from the trees. When they are in this state of maturity, in a dry day, the limbs may, he says, be slightly shaken, and partly disburdened of their golden store; thus taking such apples only as are ripe, and leaving the unripe longer on the trees, that they may also acquire a due degree of maturity. Mr Buel observes, that "the only artificial criterion employed to ascertain the quality of an apple for cider, is the specific gravity of its *must*, or unfermented juice; or the weight compared with that of water. This, says Knight, indicates, with very considerable accuracy, the strength of the future cider. Its weight and consequent value are supposed to be increased in the ratio of the increase of saccharine matter." Mr Knight says that the strongest and most highly-flavoured cider which has been obtained from the apple, was produced from fruit growing on a shallow loam, on a limestone basis. All the writers on the subject seem to agree that calcareous earth should form a component part of the soil of a cider-orchard. Coxe says the soil which yields good wheat and clover is best for a cider-orchard. Mr Buel states, "My own observation would induce me also to prefer a dry and somewhat loose soil, in which the roots destined to furnish food for the tree and fruit may penetrate freely, and range extensively in search of nutriment."

2. *Condition of the fruit.* Fruit should be used when it has attained full maturity, and before it begins to decay. The indications of ripeness we have above stated. Each kind of apple should be manufactured separately, or, at least, those kinds only should be mixed which ripen about the same time. Mr Buel says, "The apples should ripen on the tree, be gathered when dry, in a cleanly manner, spread in an airy, covered situation, if practicable, for a time, to induce an evaporation of aqueous matter, which will increase the strength and flavour of the liquor, and be separated from rotten fruit, and every kind of filth, before they are ground."

3. *Grinding*, &c. The apples should be reduced, by the mill, as nearly as possible to a uniform mass, in which the rind and seeds are scarcely discoverable, and the pomace should be exposed to the air. Knight ascertained, by experiments, that, by exposing the reduced pulp to the operation of the atmosphere for a few hours, the specific gravity of the juice increased from 1,064 to 1,078; and, from the experiment being repeated in a closed vessel with atmospheric air, he ascertained the accession to be oxygen, which, according to Lavoisier, constitutes sixty-four per cent. of sugar. For fine cider, he recommends that the fruit be ground and pressed imperfectly, and that the pulp be then exposed twenty four hours to the air, being spread and once or twice turned, to facilitate the absorption of oxygen; that it be then ground again, and the expressed juice be added to it before it is again pressed. A grater cider-mill was presented by J. R. Newell, of Boston, at an exhibition of the Massachusetts agricultural society in the autumn of 1828, for which he received a premium of twelve dollars. It is thus described by the committee who awarded the premium: "It has a wooden cylinder, upon the surface of which nails are fixed: the heads are sharp upon the edges, and project above the cylinder about one eighth of an inch. The apples are filled into a hopper placed over the cylinder, and led into a narrow cavity at the upper side of it. The cylinder is mounted on a high frame, its axes being placed in composition boxes. A rapid revolution is produced by connecting it with a horse-mill by belts or bands. The apples are reduced to a fine pomace, grated, not pressed. It performed well in the presence of the committee, and grated a barrel of russet apples in one minute thirty-four seconds."

4. *Fermentation.* The vinous fermentation commences and terminates at different periods, according to the condition and quality of the fruit, and the state of the weather. According to Knight, the best criterion to judge of the proper moment to rack off (or draw the liquor from the scum and sediment), will be the brightness of the liquor which takes place after the discharge of fixed air has ceased, and a thick crust is collected on the surface. The clear liquor should then be drawn off into another cask. If it remains bright and quiet, nothing more need be done to it till the succeeding spring; but if a scum collects on the surface, it must immediately be racked off again, as this would produce bad effects if suffered to sink.

Among the precautions used to prevent excessive fermentation is *stumming*, which is fuming the cask with burning sulphur. This is done by burning a rag impregnated with sulphur in the cask in which the liquor is to be decanted, after it has been partly filled, and rolling it, so as to incorporate the liquor with the gas. A bottle of French brandy, or half a gallon of

cider-brandy, added to a barrel, is likewise recommended, to be added as soon as the vinous fermentation is completed.

CIGAR. See *Tobacco*, and *Cuba*.

CIGNANI, Carlo; a celebrated painter, born at Bologna in 1628; he was a pupil of Albano. He frequently commenced new works, but was seldom sufficiently satisfied with his productions to consider them as finished. His Flight to Egypt was the work of six months. He knew how to compose, like the Caracci, and to distribute his figures in such a way that his paintings appear larger than they really are. His finest fresco paintings are at St Michael *in Bosco*, at Bologna, in ovals supported by angels, and in the saloon of the Farnese palace, where he represented Francis I. of France touching for the king's-evil. At Parma, in the ducal garden, he painted several pieces expressive of the power of love, which lose nothing at the side of the paintings of Augustino Caracci. In his painting of the *Assumption*, at Forli, he has imitated the beautiful *Michael* of Guido in the cupola at Ravenna, and other fine conceptions of this painter; but in his other pieces he made Correggio his model. He does not so often introduce fore-shortenings as the Lombards; and, in his outlines and drapery, he possesses a finish peculiar to himself. His pencil is powerful, and his colouring lively. Clement XI. conferred on him several marks of distinction. Being commissioned to paint the cupola of the church of Madonna del Fuoco, at Forli, he repaired to Forli with his numerous pupils, where he died in 1719. His paintings have been engraved by various artists. Of his pupils, the most distinguished were Crespi, Franceschini, Quaini, count Felix Cignani, his son, and count Paul Cignani, his nephew.

CILICIA, in ancient geography; the region between Pamphylia and Syria, lying S. of mount Taurus. The inhabitants of the coasts were formidable as pirates, and even disturbed the Ægæan and Ionian seas. The inhabitants of the northern portion lived in part a nomadic life; those in the east were devoted to agriculture. Alexander made Cilicia a Macedonian province; it then passed to the Syrians. Pompey subdued its piratical inhabitants. It was governed by kings under some of the Roman emperors, but was made a Roman province in the time of Vespasian.

CILICIUM; originally, a coarse, rough garment of goat's hair, made in Cilicia, the usual habit of the soldiers and seamen of that country. It has since been used to denote a garment of penance, made of horse-hair, which monks and hermits wear. This name is also given, in the convents, to a belt of wire, with sharp points, which press upon the body, and are intended for penance.

CIMABUE, Giovanni, one of the restorers of the art of painting in the middle ages, born at Florence in 1240, renounced his studies to follow his inclination for painting. Two Greek artists, who were invited to Florence by the senate, to paint a chapel in the church of Santa Maria Novella, were his first masters. Although these artists handled the pencil awkwardly, they however taught him, according to ancient tradition, the proportions which the Greek artists had observed in their imitations of the human figure. Attentive to their instructions, Cimabue studied principally the fine antique statues. He was the first to point out to succeeding painters the elements of the *beau ideal*, the memory of which had been extinguished during several centuries of disorder. It is true the paintings of Cimabue do not exhibit that harmonious distribution of light and shade which forms the *chiaro oscuro*. His colouring is dry, flat, and cold: the outlines of his figures intersect each other on a blue, green, or yellow ground, according to the effect which he had in view. He had no idea of linear and aerial perspective. His paintings are, properly speaking, only monochromes. But these faults, which are to be attributed to the infancy of the art, are compensated for by beauties of a high order—a grand style, accurate drawing, natural expression, noble grouping, and a fine disposition of his drapery. His best paintings are in the church of Santa Maria Novello at Florence, and in the Sacro Convento, at Assisi. He is said to have died in 1300. He may be considered the link between the ancient and modern schools of painting. Cimabue was equally successful in painting on glass and in fresco. He was also a distinguished architect. He prepared the way for Massacio, Pietro, Perugino, Giovanni Bellino, Leonardo da Vinci, Titian, Michael Angelo, and Raphael. See *Italian Art*.

CIMAROSA, Domenico, a composer, born at Naples, in 1755, received his first musical instruction from Sacchini, entered the conversatory of Loretto, where he imbibed the principles of the school of Durante, and studied with great assiduity. He soon displayed his superiority in the *Sacrificio di Abramo*, the *Olimpiade*, and other compositions. At the age of twenty-five he had already gained the applause of the principal theatres of Italy. He was invited to St Petersburg (where he remained four years) and to several German courts to compose heroic and comic operas. In the latter, he particularly distinguished himself by the novelty, warmth, humour, and liveliness of his ideas, and by a thorough acquaintance with stage effect. Among his 120 operas, the most celebrated are, *Penelope*, *Gli Orazj e Curiazj*, and *Artaserse*, among the *opere serie*; and among the *opere buffe*, *L'Italiano in Londra*, *L'Amor costante*, *Il pittore Carigino*, and many others. His comic opera *Il Matrimonio segreto* excited general enthusiasm, and received the signal honour of being performed twice on the same evening, at the desire of the emperor Leopold. From Vienna he went to Naples, and became involved there in the revolutionary commotions. He died at Venice, in 1801, from the effects of the ill-treatment which he had been subjected to in prison. His bust, by Canova, was placed in the Pantheon at Rome, in 1816, at the side of those of Sacchini and Paesiello.

CIMBRI, or CIMMERIANS, were the first German tribe known to the Greeks. Their acquaintance with them was acquired soon after the Trojan war, when the Cimbri sallied forth out of their dwellings in Tauris and European Tartary, and entered Asia Minor. At that time, the Scythians were forced to give way to the Massagetæ, and retire from the east of the Caspian sea towards the country of the Cimbri to the west. This tribe now split into parties on the question whether they should comply with the wishes of their kings, and oppose the strangers with arms, or, as another party advised, emigrate. The dispute was decided by a battle, in which the royal party was overcome. After the dead had been buried on the shores of the Tyras (Dniester), where Herodotus saw their sepulchres, the vanquished party fled to the north and east side of the Pontus, and entered Asia, where they became known to the Greeks; the other party withdrew to the Vistula, and even beyond it. The Greeks retained no knowledge of these Cimmerians but the tradition that they had proceeded to the north-west. On this account, the Greeks, when they reached the north-western ocean, considered the nations of that quarter Cimmerians; and, for the same reason, the name of *Cimbria* or *Cimmeria* was given to the Danish peninsula. Homer was acquainted with

a tradition, according to which the Cimmerians were to be found among the wild inhabitants of the caves round the Avernus; and Pytheas took a race which he found on the Danish peninsula for Cimmerians. These fables only serve to create confusion in history. The real Cimmerians had never proceeded so far north but dwelt on the Vistula, from whence, under the name of Cimbri, they sallied, together with the Teutones, and made themselves formidable to the Romans. In the year 114 B. C., when the Romans were already masters of a part of the eastern Alps, in the present Carniola, Istria, &c., and had established themselves in Dalmatia and Illyria, along the coast, immense bodies of barbarians suddenly made their appearance, who overcame the consul Papirius Carbo in the country now called *Stiria;* but, instead of entering Italy, they proceeded to the north, and, soon after, jointly with the Tigurians, entered the territory of the Allobroges. The Romans sent two armies, commanded by the consuls L. Cassius and M. Aurelius Scaurus, to oppose them, but both were defeated; the former by the Tigurians, the latter by the Cimbri. Even after this success, the victors did not enter Italy, but overran Gaul with three bodies, consisting of Teutones, Cimbri, and Ambrones. Two new armies with which the consul C. Manlius and the pro-consul Q. Servilius Cæpio hastened to oppose them, were likewise defeated, beyond the Rhodanus. The Romans lost, according to Aetius, 80,000 men. Whilst Rome placed her last hope in Marius, the barbarians overran the other western countries of Europe. Gaul suffered severely, but the Iberians and Belgians repulsed the invaders. Upon this, they resolved to descend into Italy. The Teutones and Ambrones were to enter on the western side of the Alps, the Cimbri and Tigurians on the east. After Marius had waited the approach of the first during three entire years, and had accustomed his troops to their appearance, he routed them completely (102 B. C.), in two days—on the first day the Ambrones, on the second the Teutones—at Aix, in Provence. The Cimbri, on the other hand, who had driven back the consul Catullus on the Adige, and had spread themselves along the Po, demanded land of the Romans, but were totally routed by Marius at Vercelli, 101 B. C. After this period, the Cimbri and Teutones disappear from history. A part of them had remained behind in Belgia with the baggage. These are the Advatici. At a later period, the Romans recognised the Cimbri to be a German nation. For a long time, deceived by their appearance, they took them for Celts. The Celtic exterior of the Cimbri may be explained by their connexion and mixture with the Celts on their march from the Danube and the Carpathian mountains.

CIMON, son of Miltiades and Hegesipyle, daughter of a Thracian prince, Olorus, was, according to Plutarch, educated in a very negligent manner, and indulged in every species of excess. In the Persian war, he began to make himself known. When Themistocles proposed to abandon the city and take refuge in the ships, in order to carry on the war by sea, Cimon, in company with several other young men, ascended the citadel, deposited the bridle of his horse in the temple, and took from the wall one of the shields, with which he went down to the fleet. He displayed great courage in the battle of Salamis, and attracted the attention of Aristides, who attached himself to him, as he considered him fit to counteract the dangerous influence of Themistocles. When the Athenians, in concert with the other Greeks, sent a fleet to Asia for the purpose of delivering their colonies from the Persian yoke, they gave Aristides and Cimon the chief command; and the return of Aristides to Athens, soon after, left Cimon at the head of the whole naval force of Greece. He distinguished himself by his splendid achievements in Thrace, defeated the Persians on the banks of the Strymon, and made himself master of the country. He conquered the island of Scyros, the inhabitants of which were addicted to piracy, and founded an Athenian colony there. Here he found the remains of Theseus, and transported them to Athens, where a temple was then built, for the first time, to this hero. He next subdued all the cities on the coast of Asia Minor, and went against the Persian fleet, which lay at the mouth of the Eurymedon. The Persians, although superior in number, did not dare to abide an engagement, but sailed up the river, to place themselves under the protection of their land-forces. Cimon pursued and attacked them, and took or destroyed more than 200 of their ships. He then landed, and entirely defeated their army. These two victories, achieved in one day (B. C. 469), delivered Greece from the Persians. Cimon returned to Athens, in the embellishment of which he employed the spoils which he had taken. He removed the walls from his fields and gardens, that every one might be at liberty to take whatever he pleased. His table was spread for all the citizens of his *curia*. He never appeared in public without being attended by several slaves bearing garments, which he distributed to the poor. He adorned the city with elegant walks, caused the market-place to be planted with plane-trees, transferred the academy to the beautiful gardens of Athens, all at his own expense. This generosity was the more noble, as it could hardly be attributed to a desire of courting the people; for he constantly opposed Themistocles, and, at a subsequent period, Pericles and Ephialtes, who endeavoured to extend the power of the people. Cimon used his influence to preserve a good understanding between the Athenians and Lacedæmonians, by the latter of whom he was much beloved, and whom he sought to imitate. About 466 B. C., the Thasians having revolted, he defeated them, took possession of their city, and of their gold mines on the neighbouring continent, and founded the city of Amphipolis. Scarcely had he returned to Athens, when Pericles, and the other popular leaders, accused him of being corrupted by the king of Macedon, because he had refrained from seizing the possessions of that prince in time of peace. But the people rejected so groundless an accusation. An insurrection of the Helots having broken out during the enterprise against Thasos, the Lacedæmonians sought the assistance of the Athenians, who were induced by Cimon to send them aid. The Lacedæmonians, however, fearing the inconstancy of the Athenians, sent back their troops, and thus excited their displeasure. Pericles and Ephialtes had also profited by Cimon's absence to take the jurisdiction, in a multitude of cases, from the Areopagus, and transfer it to the Heliasts; thus giving an immense power to the inferior classes. Cimon endeavoured, in vain, on his return, to place matters on the old footing. His enemies, therefore, took advantage of the popular discontent, to which that subject had given rise, to procure his banishment. He retired into Bœotia. Soon after, when the Athenians advanced to Tanagra, in order to dispute the passage of the Lacedæmonians, who were returning from Delphi, which they had freed from the Phocians, he appeared, prepared to fight, with his tribe. He urged his friends to show, by their conduct, the groundlessness of the accusation brought against him of favouring the Lacedæmonians, and nearly all of them fell fighting with the greatest bravery. Although the Athenians lost this battle, they still continued the war till 456 B. C., when, the Helots being entirely subdued, the Athenians feared

that the whole power of Lacedæmon would be turned against them. They recalled Cimon, who concluded a peace, but, at the same time, to afford employment to the restless spirit of the Athenians, undertook an expedition against Egypt and Cyprus. He sailed against Cyprus with 200 ships, whence he sent 60 to Egypt. With the remainder he defeated the Persian fleet and army on the Phœnician coast (450). The *peace of Cimon* (B. C. 449), of which Isocrates, Demosthenes, Diodorus, and Plutarch speak, but which Thucydides does not mention, probably never took place. Those authors were deceived by the report of a treaty which was not concluded. In 449, Cimon besieged the city of Citium, but died before it was taken, and after his death the Athenians retired. Athens lost in him, one of her most distinguished citizens. The popular party, which he had opposed, now gained the superiority.

CINALOA, a province on the west side of Mexico, comprehended under the intendancy of Sonora, lying between New Biscay and the gulf of California; 300 miles long, and 150 broad. The air is pure and healthy, the land good and fertile, producing abundance of maize, legumes, fruits, and cotton. The natives are robust and warlike, and were with difficulty brought to submit to the Spaniards. They make use of bows with poisoned arrows, clubs of red-wood, and bucklers. Population, 60,000.

CINALOA, or St FELIPE Y St JAGO; a town of Mexico, in a province of the same name, 630 miles N. W. Mexico; lon. 106° 40′ W.; lat. 26° 26′ N.; population, 9500.

CINCHONA. See *Bark, Peruvian.*

CINCINNATI, (the Cincinnatuses); a society established by the officers of the revolutionary army of America, in 1783, to perpetuate their friendship, and to raise a fund for relieving the widows and orphans of those who had fallen during the war. The name of *Cincinnatus* (q. v.) was adopted, as emblematic of the civic character of the American army. The honours of the society were to be hereditary in the eldest male line of the original members, and, in default of male issue, in the collateral male line. This association excited the fears of the republicans in America, and, among them, of Franklin: they saw in it the germ of a future aristocracy. At the first general meeting of the order, at Philadelphia, 1784, some modifications were, therefore, made in the constitution, and, in some of the states, it was silently abandoned. At present, there are seven state societies, which hold a general meeting by delegates triennially. The badge of the society is a bald eagle suspended by a blue ribbon edged with white, emblematic of the union of France and America. On the breast of the eagle, Cincinnatus is receiving the military ensigns from the three senators; the implements of husbandry are seen in the back-ground; round the whole, *Omnia reliquit servare rempublicam.* On the reverse, Fame is crowning Cincinnatus with a wreath, inscribed *Virtutis præmium,* with other emblems; round the whole, *Societas Cincinnatorum, instituta A. D.* 1783.

CINCINNATI, a city of the state of Ohio, in Hamilton county, on the north bank of the river Ohio; 20 miles above the mouth of the Great Miami, 122 above Louisville; lon. 84° 27′ W.: population, in 1805, 750; in 1810, 2540; in 1820, 9642; and, in 1829, 24,148. Cincinnati was first laid out in 1789, and began to flourish after the year 1794, since which time its growth in population, wealth, and trade has been exceedingly rapid. It is a great emporium of the western country, and, next to New Orleans, much the largest town in the United States west of the Alleghany mountains. The city is advantageously and pleasantly situated. It stands partly on the first and partly on the second bank of the river, the upper part being elevated 50 or 60 feet above the lower. The central part of the town is very compact and a great portion of the houses are handsomely built of brick. The principal public buildings and institutions in 1829 were a court-house, a jail, the medical college, the Cincinnati college, an hospital, a museum, a city library, the apprentices' library, three market-houses, five insurance companies, twenty-three places of public worship, five classical schools, and forty-seven common schools. There were published at the same period, two daily newspapers, two semi-weekly, and five weekly, besides other periodical publications. In 1826, there belonged to the city twenty-eight clergymen, thirty-four attorneys, and thirty-five physicians. The number of students in the medical college, in 1825, was eighty-two. The Cincinnati college was incorporated in 1819. Cincinnati is a place of great trade and extensive manufactures. The exports, of which the most considerable articles are flour and pork, amounted, in 1826, to 1,063,560 dollars; and the imports, in the same year, to 2,528,590 dollars. A considerable portion of the imports is brought here for re-exportation. There are between thirty and forty manufacturing establishments, some of which are on a very extensive scale; and their works are, to a great extent, moved by steam power. The whole value of the manufactures, in all the departments, was estimated, in 1828, at 1,850,000 dollars. The markets of Cincinnati are abundantly supplied with various kinds of provisions, which are furnished at a low price. Cincinnati has recently acquired some notoriety in Britain, as having been the residence of Mrs Trollope, the caustic limner of American manners.

CINCINNATUS, Lucius Quinctius, a patrician belonging to the earliest period of the Roman republic, equally distinguished by heroism, magnanimity, contentment, and disinterestedness, was chosen consul 460 B. C. The messengers charged with the information of his election found him at the plough in the fields. He accepted the office, and only regretted that his little farm would be neglected. He behaved, while in the consulship, disinterestedly and honourably, but refused it when it was offered to him the following year, and afterwards received the dictatorship for six months, to terminate the unhappy war with the neighbouring Æqui. The messengers again found him at his plough. He immediately joined and assisted the consul Minutius, surprised the enemies during the night, made prisoners of all their army, and divided the booty amongst his soldiers, only retaining for himself a golden crown, which his army had presented to him to express their gratitude. After having celebrated a triumph, he resigned his office, which he had held only during sixteen days, and returned to his rural retirement. At an advanced age, he was again elected dictator to restrain the power of Spurius Mælius, a dangerous and turbulent man: he proposed the most effectual arrangements, and, after the principal mutineer had been killed by a certain Ahala, dispersed his adherents. Thus Cincinnatus was twice the deliverer of his country, which revered him as a father.

CINNA, Lucius Cornelius, an adherent of Marius, who, when Sylla had made himself odious by the proscription of Marius, obtained the consulship, and accused Sylla, who was just going as proconsul to Asia, of mal-administration. Sylla thought it not advisable to take notice of this complaint. When Cinna afterwards wished to carry by force a new law in favour of the allies, a bloody battle commenced in the forum between his party and the party of the senate, at the head of which stood Octavius, the other consul. Cinna and his party were conquered,

and, with a loss of 10,000 men, were driven from the city. He flew to the allies, collected thirty legions, called the proscribed to his support, and, among these Marius, made himself master of Rome, and assented to the plan of Marius to put to death all the senators who were opposed to the people. This massacre continued for five days. The following year, he, together with Marius, arbitrarily assumed the consulship. Sylla now appeared, and Cinna wished to march against him, but his soldiers refused, and put him to death.

CINNA, Cornelius, a grandson of Pompey, was at the head of a conspiracy against Augustus, who generously forgave him, and even transferred to him the consulship. Cinna was, therefore, devoted to the emperor, till his death, with inviolable fidelity.

CINNABAR. See *Mercury*.

CINNAMON is the under branches of a tree of the bay tribe (*laurus cinnamomum*), which is chiefly found in the island of Ceylon, but which grows in Malabar, and other parts of the East Indies. This tree attains the height of twenty or thirty feet. Its leaves are oval, each from four to six inches long, and marked with three principal nerves. The flowers stand on slender footstalks, and are of a pale-yellow colour; and the fruit is shaped somewhat like an acorn. There are two principal seasons of the year, in which the Ceylonese enter their woods for the purpose of barking the cinnamon-trees. The first of these commences in April, and the last in November; the former being that in which the great crop is obtained. In this operation, the branches of three years' growth are cut down, and the outside pellicle of the bark is scraped away. The twigs are then ripped up lengthwise with a knife, and the bark is gradually loosened, till it can be entirely taken off. It is then cut into slices, and, on being exposed to the sun, curls up in drying. The smaller pieces, or *quills*, as they are called, are inserted into the larger ones, and these are afterwards tied into bundles. Cinnamon is examined and arranged according to its quality, by persons who, for this purpose, are obliged to taste and chew it. This is a very troublesome and disagreeable office, few persons being unable to hold out more than two or three days successively, as the cinnamon deprives the tongue and lips of all the mucus with which they are covered. After this examination, the bundles are made up to the length of about four feet, and weigh about eighty-eight pounds each. From the roots of the trees numerous off-sets shoot up. These, when they have attained the height of about ten feet, are cut down and barked, being then about the thickness of a common walking stick. The cinnamon which they yield is much finer than any other. A French ship, bound, in 1782, from the island of Bourbon to cape François, in St Domingo, and having on board various Oriental productions, the cinnamon-tree among the rest, was taken by admiral Rodney, who presented the rees to the assembly of Jamaica; and from this parent stock, different parts of that island were afterwards supplied. In Ceylon, the cinnamon-trees are said to be so common as to be used for fuel and other domestic purposes. The smell of cinnamon, particularly of the thinnest pieces, is delightfully fragrant, and its taste pungent and aromatic, with considerable sweetness and astringency. If infused in boiling water, in a covered vessel, it gives out much of its grateful flavour, and forms an agreeable liquid. An oil is extracted from cinnamon, which is heavier than water. This is prepared in Ceylon, and almost wholly from the small and broken pieces. It is made, however, in such small quantity, that the oil of cassia is generally substituted for it: indeed, the cassia bark is often substituted for cinnamon, to which it has considerable resemblance, although in its qualities it is much weaker, and though it is immediately distinguishable by its slimy taste. The virtues of cinnamon are not confined to the bark. The leaves, the fruit and the root, all yield oil of considerable value. That from the fruit is highly fragrant, of thick consistence, and, at Ceylon, was formerly made into candles, for the sole use of the king.

CINO DA PISTOIA; an Italian juris-consult and poet; born in 1270, at Pistoia, of the family of Sinibuldi, or Sinibaldi. His proper name was *Guittone*, which the Florentines changed to *Guittoncino*, and then abbreviated it to *Cino*. He finished his studies at Bologna, and subsequently acted as judge in Pistoia till 1307, when the civil war, known by the name of the *contest between the Neri and Bianchi*, obliged him to flee. He first took refuge with a friend on the borders of Lombardy, who also belonged to the party of the Bianchi, and whose daughter Selvaggia, had gained his affection; but her death soon followed. Cino then travelled through Lombardy and France, and remained some time at Paris, but returned to Italy before 1314; for in that year he published, at Bologna, his commentary on the Justinian code, which he had completed in two years, and which excited universal admiration on account of its extent and the difficulty of the subject. In consequence of this, he received the diploma of doctor of law. Several universities were anxious to secure his services. He lived three years at Treviso, and still longer at Perugia, where the famous Bartolo was his scholar. It is doubtful whether, as some assert, he actually instructed at Bologna, Sienna, and even at Paris; but he certainly was professor, in 1334, at the university of Florence. He taught the civil law. Petrarca and Boccaccio were not his scholars, as it has been said. Cino returned to Pistoia in 1336, where he died in the same or the beginning of the following year. His commentary surpassed every thing of the kind which had appeared before, and went through several editions. He ranks amongst the best of the early Italian poets, and resembles Petrarca more than any of the other predecessors of this poet. His poems, the principal subject of which is the above-mentioned Selvaggia, were first published at Rome, in 1558, by Pilli. They afterwards appeared in Venice, increased by a second volume, which, however, was not considered genuine. The most complete edition is that of Ciampi (Florence, 1812, second edition,) with the author's life.

CINQUE PORTS; eight seaports of England, on the coasts of Kent and Sussex—Dover, Sandwich, Hastings, Hithe, Romney, Winchelsea, Rye, and Seaford. They were originally only five, the three latter having been declared ports subsequent to the first institution. They are under a lord warden, and are endowed with considerable privileges. Though the above-mentioned cities have long since lost their importance, their harbours being filled with mud, so as not to admit men-of-war, most of their privileges continue, as does the office of the warden, a mere sinecure, of £3000 annual income.

CIPHERS are the signs for numbers. (q. v.) They are either borrowed signs as letters, with which, for instance, the Greeks and several tribes of the north of Europe designated their numbers; or peculiar characters, as the Roman and modern or Arabic ones. As the decimal system must be considered one of the grandest inventions of man, we must also acknowledge the system of numbers which we now use to be a proof of extraordinary genius and a deep, philosophical mind; and it cannot be doubted, that our progress in mathematical science, abstract and applied, would have been much slower without the Arabic ciphers, which, in fact, are indispensable to the great calculations which occur daily in modern astronomy. The

ciphers, such as they are at present, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, did not attain their present character till a pretty late period. We have them from the Arabians, who, according to Abulpharagius (*Dynast.* 1, p. 16), say that they received the invention from the Indians. According to a recent discovery of professor Seyffarth of Leipsic, in Turin, on a papyrus manuscript, it seems probable that the Egyptians were acquainted with the present system of ciphers, at least in its principles. As early as the ninth century, ciphers were used, though seldom, in France. Not until the eleventh century did their use become, in any degree, common in Europe. According to de Matthæis, the Roman ciphers are derived from the nails which the Etruscans, and after them the Romans, annually drove into their temples, in order to express their divisions of time. Probably the eldest trace of Roman ciphers is that in the inscription upon the *colonna rostrata*.

Cipher is also the name given to various methods of writing in secret characters, chiefly used in the correspondence of diplomatic agents with their courts. (See *Cryptography* and *Deciphering*.) A kind of monogram, in which the initial letters of the Christian and family names of a person are entwined within each other, has the same name.

CIPRIANI, Giambattista; a painter and engraver, born at Pistoia, in 1732, died at London in 1785. His teacher is not known, but it is certain that Correggio was his model. At the age of eighteen, he went to Rome, to perfect himself in his art. His talents soon gained him reputation. Some Englishmen, who met him there, induced him to go to London. He was one of the first fellows of the royal academy, instituted in 1769. His drawing is correct, his heads have grace and loveliness, his colouring is harmonious, and the general impression of his composition charming. For Ariosto's *Orlando Furioso* he executed a number of copperplate illustrations, in which he displays all the beauty of his genius. Many fine engravings of Bartolozzi are from the designs of Cipriani.

CIRCASSIA; a country of Asia on the north side of the Caucasus, extending from the Black to the Caspian sea. The inhabitants call themselves *Adige;* by the Turks and Tartars they are called *Tcherkas* (i. e. highway robbers); by the Arabs, *Memalik;* by the Ossetes, likewise a nation dwelling on mount Caucasus, they are called *Kasachi*. They inhabit the districts, 1. Great Kabarda; 2. Little Kabarda; 3. Beslen, on the greater Laba, which flows into the Kuban; 4. Temirgoi on the Schagwascha; 5. Abassia, chiefly on the river Pschaha; 6. Bseduch, in the lower districts of the Rhuasch; 7. Hadukai; 8. Bschana. This powerful and warlike nation might become extremely formidable, if, instead of being subject to numerous little princes, it were united under one head. The most important of the Circassian branches of the Kuban are the Temirgoi: they inhabit more than forty fortified villages, and can send 2000 men into the field. The Schagacki, below the Russian fortress Anapa, have a prince, who formerly maintained vessels on the Black sea. The Kabarda Circassians, a half-civilized nation, inhabit a fertile country on the northern frontier of the Terek, and are distinguished from all the other nations of the Caucasus by their beauty. The men are of lofty stature, regular features, and unequalled in the use of the sabre. The woman have delicate figures, light complexions, dark hair, regular features, and full bosoms. They are considered the principal ornaments of the Turkish harams. The Circassian prince or nobleman, that is, every one who does not serve, and possesses a horse, is constantly armed with a dagger and pistols, and seldom leaves his house without his sabre and quiver. A helmet and a coat of mail cover his head and his breast. Kabarda furnishes 1500 noblemen, or *uzdens*, and 10,000 peasants, or serving-men, capable of bearing arms. But the princes of Kabarda destroy each other by constant hostilities. The soil of Kabarda is excellent for agriculture; but the winter is severe, and the warm season not of long duration. The inhabitants neglect the gifts of nature, viz the mines, from which they might extract the most useful metals, such as iron and copper, for the manufacture of their weapons. A great part of their wealth consists in goats, sheep, oxen, and horses. They sell wool and wax. Their horses are distinguished for beauty, strength, and fleetness. They burn a mark on the colts of a good breed. Their feudal system is worthy of notice. The subject is the property of the prince: although he cannot be sold, he is compelled to perform all personal services, but pays no taxes. The nobleman maintains order among the people, and serves the prince in war. The latter keeps an open table, and all those who own herds contribute to it. Marriages are concluded with reference to riches and birth. Immediately after the birth of a princely child, it is taken from the parental house, and its education confided to a nobleman. The boys are instructed in hunting, plundering, and fighting; the girls in embroidering, sewing, and plaiting straw. There is a law of hospitality among the Circassians, called *kunadi*: the life of the host is responsible for its observance to the stranger on whom it has been conferred. If a murder is committed, the relations of the deceased take the life of the murderer: no money can conciliate them. Formerly, these people were Christians. At present, they are Mohammedans, but by no means zealous observers of the precepts of the Koran. After the downfall of the Chazaric empire, the Circassians appear to have been subject to the Arabians, Tartars, and perhaps, likewise, to the Georgians. Towards the end of the sixteenth century, they became vassals to the Russians. The czar Iwan Wasiliewitch, in 1566, sent a small army, under general Daschkow, to the aid of Temruk, a Circassian prince; but, after the death of Iwan, the Russian court neglected these distant subjects, and they became tributary to the khans of the Crimea, until, tired of the ill-treatment of their officers, they took up arms, and overcame an army of 30,000 men. At present, Tcherkassia, (Circassia)—contain 31,785 square miles, and 550,000 inhabitants.

CIRCE; a powerful sorceress; according to some, the daughter of Sol and Perseis, one of the Oceanides; according to others, of Hyperion and Asterope; the sister of Aetes and Pasiphae. She lived in a valley situated in an island on the western coast of Italy. Her palace was built of shining stones, in an open place, surrounded by tame lions and wolves. Her employment was weaving; and, during her work, she amused herself with singing: her servants were four mountain and river nymphs. Ulysses, in his wanderings, landed on her island, and sent out Eurylochus with a party to explore the country. They arrived at the palace of Circe, who gave them food and wine, and with her magic wand changed them into swine. Eurylochus only, by cautiously abstaining from the magical potion, escaped the transformation, and informed Ulysses of the event. He immediately proceeded himself into the country to free his companions. On the way, Mercury met him, informed him how to conduct himself before the sorceress, and gave him the plant called *moly*, as a means of delivering his companions. Thus armed, he appeared before Circe, whose potion had no effect upon him. Following Mercury's advice, he then ran upon her with his drawn sword threatening her with death, and compelled her to bind herself by an oath to do

him no injury, and deliver his companions. Ulysses remained with her a whole year, and had by her two sons—Adrius, or Agrius, and Latinus. Before his departure, she told him that, in order to secure a safe return to his country, he must visit the infernal regions, and ask advice of Tiresias.

CIRCLE (Latin *circulus*); a plane figure comprehended under a single line which returns into itself, having a point in the middle, from which all the lines drawn to its circumference are equal. This point is called the *centre*, and these lines the *radii*. Although, properly speaking, it is the space included within the periphery or circumference, yet, in the popular use of the word *circle* is frequently used for the periphery alone. From the geometrical definition of the circle, it appears that its magnitude is dependent upon the magnitude of its radius or its diameter, i. e., a line which touches two points of the circumference, and passes at the same time, through the centre, or, which is the same thing, a line equal to twice the length of the radius. The surface of the circle is equal to the product of the circumference and half the radius. If there existed a rational proportion, that is, a proportion to be expressed in whole numbers, of the surface of the circle to a square surface, there would be, at the same time, a rational proportion between the diameter and the circumference. But, from geometrical reasons, no rational proportion of the diameter to the circumference is possible; it can be expressed only by approximation. However, the proportion thus obtained is quite as accurate as is necessary for any purpose in the applied mathematics. Yet there have always been instances, and some of a very late date, of men labouring long and intensely in searching for the square equal to the surface of the circle, and who often believed that they had actually solved the problem. Very recently, the newspapers were full of such a solution by a boy in England. In the approximate proportion, if the diameter is called 1, the circumference will be equal to 3·1415926535.... Francis Vieta obtained the proportion to this number of figures. Afterwards it was further determined by Adrianus Romanus to 15, by Ludolphus of Cologne (often improperly called *von Keulen*) to 35 (from him it is often called the *Ludolphic number*), by Sharp to 72, by Machin to 100, by Lagny to 126, and lastly, in an Oxford manuscript, it was obtained up to 156 decimals. Archimedes first estimated the proportion of the diameter to the circumference to be as 7 to 22, or as 1 to 3·142....; after him, Metius, as 113 or 355, or as 1 to 3·1415929, which is correct to 6 decimals, and sufficiently accurate for most purposes. Every circle is divided into 360 degrees, and by its arcs all angles are measured. The circle, therefore, is one of the most important geometrical figures, and an accurate division of it is requisite for measuring the angles under which distant objects appear (upon which surveying, astronomical observations, &c. rest)—a very desirable object, for which many prizes have been offered by learned societies. See *Degree*.

Circle, in logic; the fault of an argument that supposes the principle it should prove, and afterwards proves the principle by the thing which it seemed to have proved. The same fault takes place in definitions, when an idea is defined by others which suppose the knowledge of the first. Arguing in a circle is a fault into which men are very liable to fall, particularly in theological discussions.

CIRCUITS; in England, divisions of the kingdom appointed for the judges to pass through twice in the course of a year for the purpose of administering justice to the several counties. The counties of England are divided into six circuits, and two judges go on each circuit.—In America, the same name is given to the divisions of the country traversed annually by the judges of the supreme court of the United States, for the purpose of trying causes which fall within the jurisdiction of the national courts.

CIRCULAR INSTRUMENT. See *Reflecting Circle*.

CIRCULAR MOTION. A body in motion, which is continually impelled by some power towards a fixed point out of its original direction, is obliged to describe a curvilinear path round this point. A stone, slung round by a string moves in a circle, because it is drawn toward the hand in every point of its path. The moon moves in a circle round the earth, because it gravitates towards the earth, and is thus drawn from the rectilinear direction, which it would otherwise pursue. In such cases, the point to which the body constantly tends, is called the *centre of the forces*, the force itself, by which it is impelled, is called the *centripetal force;* that by which it strives to fly from the centre is called the *centrifugal force*, and the motion which is produced by these two forces, the *circular motion*. All the planets in the solar system are carried round the sun, and the satellites round their planets, by these forces. (See *Central Forces*.)—The theory of circular motion is a subject of celestial mechanics, on which Newton composed his *Principia Mathematica Philosoph. Natural.*, and Laplace his *Mecanique Celeste*, &c. As the model of a concise and beautiful exposition, we recommend the article under this head in Gehler's *Physqalisches Worterbuch* (Dictionary of Natural Philosophy).

CIRCULAR PARTS (Napier's rule for). A rule invented by Baron Napier of Merchiston near Edinburgh, for the solution of all cases of right-angled spherical triangles, eminent for its comprehensiveness and utility in extensive surveys, navigation, and practical astronomy. See *Trigonometry*.

CIRCULAR SAILING. See *Navigation*.

CIRCULAR SAWS. See *Saw Mill*.

CIRCULATING MEDIUM. The expression *circulating medium* is now much more frequently used than formerly. It means the medium of exchanges, or purchases and sales, whether this medium be gold or silver coin, paper, or any other article, as oxen, tobacco, iron, slaves, usually employed in any place as the measure of the values of other articles, and is thus of a more comprehensive signification than the term *money*, which, though it applies to gold and silver coin, paper currency, and some other of the various articles used for the above purpose, does not comprehend them all, since oxen, which have, by some nations, at some periods, been adopted as the measure of the comparative values of articles of commerce, would hardly be considered as coming under the denomination of *money*. It is hardly possible to imagine a people to be without a circulating medium of some description; and, accordingly, we find all the tribes of savages hitherto discovered referring to some article in estimating the value of the various commodities which compose their capital. Captain Franklin says, the Krees Indians use beaver skins as their medium, and estimate the value of things by a certain number of their skins. The people of Virginia, in the earlier periods of their colonial history, estimated value by pounds of tobacco. In some parts of Africa, a species of small shells, cowries, are the medium of exchanges. But from the earliest times, the precious metals, where they could be had, have been preferred for this purpose, because their weight, fineness, and, consequently, value, could be more accurately ascertained than those of any other article, and thus comprise a sufficient value in a small compass and weight to be a convenient

medium. Many species of precious stones comprise a greater value in the same bulk and weight than either gold or silver, but their value cannot be so precisely estimated, nor are they found in sufficient quantities. Platina would be as convenient a medium as either gold or silver, provided it should continue to retain its present value; but it has not as yet been produced in sufficient abundance. It is one essential quality of a circulating medium, that it should have an intrinsic marketable value. Gold and silver, for instance, besides answering as a medium, have as positive a market value as iron, tin, leather, or corn. This value is derived from their utility in the useful and ornamental arts; and it may be more precisely ascertained than the value of most other articles, since an agreement for a certain number of beaver skins, a certain quantity of tobacco, and still more for a certain number of cattle, admits of some doubt and dispute as to the quality; but an agreement for a certain weight of gold, of given fineness, admits of no dispute; it can be reduced to the utmost certainty.

But we see other kinds of currency, which apparently answer the purpose of a circulating medium, and which have very little value. A small piece of paper, not worth intrinsically one farthing, passes for many pounds; and this sometimes leads people into the mistaken notion that intrinsic value is not an essential quality in the public currency. But we must look at what is printed or written on this paper, to learn why it passes for currency. It bears a promise that the holder shall be entitled to a certain number of pounds; of course, a certain quantity of gold and silver, of a certain fineness. If this promise be valid, and be kept, then the real medium is gold and silver, though this gold and silver may be locked up in a bank. But it may be said, that there is not, in the banks, where bank paper circulates, and, perhaps, not in the community, more than one pound in silver or gold for four pounds promised in the paper in circulation. How then can four pounds of paper be redeemed by one of silver? This is very easy. One holder of a paper pound demands the silver at the bank, and passes it off, or keeps it in his purse. Now if the bank can induce this person, or the one to whom he passes the pound, to let them have it again, that is, to loan it to them, or to take something in exchange for it, they can then, with the same silver pound, redeem the second paper one, and so on. Thus a bank that has capital, and a good credit, will be always able to reclaim and use the same specie successively to redeem its paper, and, if it be skilfully conducted, it will always be able to command it as fast as its bills can be collected and presented for payment. A community, therefore, which only uses specie and redeemable paper as currency, has, to all practical purposes, a specie medium. The paper is, in short, so much specie, for all practical purposes, for it will command gold and silver. Here, then, is evidently an advantage gained; for, if a bank, by putting one pound in its vaults, can loan out four pounds on interest, it makes a great income on its capital, while the community loses nothing, but gains, rather; for this paper is much more convenient for transportation, and equally convenient in all other respects. It is a great object in every community to gain this advantage, arising from multiplication of money. Individuals, if not prohibited by the laws, will soon issue their paper money, and many of them make promises of paying pounds, which they cannot fulfill, and thus the public be defrauded. On the other hand, the government often makes the bubble by the issue of paper money, or promises of payment never to be fulfilled.

There has rarely, if ever, been an instance of a government issuing paper money, and redeeming it punctually, and to its full nominal amount. Innumerable issues of this sort of circulating medium were made by the American colonies before the establishment of the independence of the United States; and, during the war of independence, the country was inundated with what was called *continental money*, which was never redeemed. Russia and Austria have this species of currency in circulation, always depreciated, as is usual with such money. Formerly, the sovereigns of Europe had a practice of debasing the current coin, when they wished to levy a tax in disguise, so as to make the copper, with which they alloyed the silver, pass as of the value of silver. But in modern times, instead of debasing the coin, the usual resort is to a government bank or to govern ment paper. Government paper, issued as the ordinary currency, usually proves to be a bubble. And it may be taken for a general rule, that no currency is safe which is not of an intrinsic value, or is not based upon capital sacredly pledged to its redemption. The question then recurs, why the government may not pledge a certain amount of capital for the redemption of its paper. The reason is, that this capital must be managed, and a vast deal of skill and economy is requisite in managing a redeemable paper currency; and of all managers, the agents of a government are the least thrifty and economical. Besides, the government will ruin the credit of its own paper by excessive issues in its exigencies in times of war, when the effects of a destruction of its credit are the most disastrous. The government, therefore, ought never to trust itself to be a banker, or to issue paper money, except in desperate circumstances or pressing exigencies, when no other measure can be resorted to, and when what would otherwise be wrong and dishonest is excused for the sake of preventing the greatest national calamities. If, then, neither the government nor individuals can safely supply a circulating medium of promises, what system can be safely adopted, which shall afford all the advantages of a multiplication, in effect, of the medium of intrinsic value, namely, the gold and silver? Undoubtedly the system of bank circulation, whereby a certain capital is sacredly pledged to the redemption of the promises of payment of money made in the circulating bills. A well contrived, skilfully conducted system of banking, connected with one of circulation, is one of the greatest triumphs of national economy. The interest, as well as the reputation of individuals, is thus pledged in support of the system, and in furtherance of the general industry and prosperity. But shall individuals reap all the advantages of the practical multiplication of capital in consequence of supplying a currency based upon, but not consisting exclusively of specie? By no means. The government may indirectly reap greater advantages from this system, than they possibly can from an attempt at becoming themselves bankers for the community, by sharing the profits with those who actually conduct the business. It is one of the proper and most important functions of the government to regulate the currency. It is bound to interfere, with proper restrictions, for preventing the frauds and bubbles to which individual enterprise and speculation inevitably lead, if let loose in the career of credit; and it has a profit, in so doing, by reaping some of the advantages of a bank circulation, and thus gaining an income without, in fact, levying a tax. Thus, if the circulation of the notes of individuals, as a currency, is prohibited, and certain institutions have a right by charter to supply the currency by an issue of their bank notes, on paying to the government a certain *bonus*, as a

certain per cent. on their capital, or the amount of the bills which they keep in circulation, or the amount of the dividends made on their stock, the government derives a revenue from its right to regulate the currency; and yet no one, in fact, pays this amount to the government as a tax, for the banks which pay it receive a consideration in the privilege of supplying the currency. As long as the government does not bear oppressively upon this species of monopoly, by attempting to levy an excessive tax for the privilege, and thus discouraging it, a liberal income may be derived from the substitution of promises on paper, instead of gold and silver, for the ordinary purposes of circulation and exchange, and, at the same time, such guarantees may be provided as to prevent abuse and fraud and render this currency as safe as that of specie.

CIRCULATION OF THE BLOOD. See *Physiology*.

CIRCUMCISION, the custom prevailing among several Eastern nations of cutting off the prepuce of the virile member. The most ancient nation among whom this custom prevailed was the Egyptians; and we find it still among the aborigines of Egypt, even among the Christian Copts (q. v.), and the Abyssinians (q. v.), who profess Christianity, and other African nations, who seem to have received it, like the Abyssinians, from the Egyptians. The Jews perform this ancient ceremony, by which the descendants of Abraham were to be distinguished from other nations, as a rite instituted by God, on the eighth day after the birth. The circumcised person is, as it were, naturalized by this ceremony, or introduced among the people of God. Moses found it among the nation, and confirmed it. The Mohammedan circumcision is probably an ancient Ishmaelite custom, which the Ishmaelites and the Israelites received from their common father, Abraham. The Koran of Mohammed did not introduce circumcision; it was already in use among his nation, and was introduced by them, with Islamism, as a sacred rite, into all countries where their religion was received. The original object of this custom was probably the promotion of cleanliness, which is doubly necessary among the inhabitants of hot countries, for the prevention of many diseases; but it is a mistake to suppose that it increases fertility. There is also a kind of circumcision, or excision, performed on the female sex. In Egypt, Mohammedan maidens are often circumcised; and the Abyssinians circumcise both sexes. The word *circumcised* is often used in the Old Testament to denote the Jews.

Circumcision is also the name of a feast, celebrated on the first of January, in commemoration of the circumcision of our Saviour. The day was anciently celebrated as a fast, in opposition to the customs of the pagans, who feasted on it in honour of the god Janus.

CIRCUMNAVIGATORS. Magellan, a Portuguese, was the first of those intrepid men, who, following in the path of Columbus, traversed the ocean from the east to the west, and, pursuing this direction, at last returned to their country. He circumnavigated the world in 1519—21. In his passage through the straits of Magellan, or round cape Horn, into the southern seas, he was followed by the Spaniards (Fuca, Mendaina, Quiros, and others down to Malaspina), by the French (Bougainville, La Peyrouse, q. v., others, down to Freycinet, q. v.), by the Dutch (Baarents, Heemskerk, Hertoge, Tasman, Roggewein), by Englishmen and Russians (from Deschneff to Krusenstern, and Otto von Kotzebue, q. v.), and, lastly, by North Americans. The English, as was to have been expected, have made the most numerous and important voyages round the world. Fifty years after Cabot, Hugh Willoughby (1553) reached Nova Zembla, on his northern expedition. All attempts since made to enter the Pacific by a north-eastern or north-western passage have been fruitless. See *Expeditions to the North Pole*.—But the eleven voyages to the north-east and north-west by Frobisher, Gilbert, Davis, Weymouth (1591), and several other navigators, were important from the discoveries of new lands and productive fisheries, to which they led. At the same time, Francis Drake made a voyage round the earth. Cavendish, Chidley and Hawkins followed their great predecessors to the south, but less successfully. Amongst the bold navigators who undertook great expeditions in the seventeenth century, Hudson, Baffin, Dampier, Halley and Woods Rogers, were distinguished by the importance of their discoveries. Woods Rogers proceeded to 62° 53′ S., and the Russian captain Bellinghausen to 70° in the year 1820. (Rogers brought Alexander Selkirk, the reputed Crusoe, home with him.) Thirty years after Rogers, lord Anson (1741—44) made a voyage round the world. With him commences a great era in the discoveries in the South seas, embracing the entire Polynesia. Then followed the voyages of discovery by Carteret and Wallis (1767). The voyages of Cook, beginning in 1770, made a new era in circumnavigation. At last, Vancouver made geographers and navigators well acquainted with the north-western coast of America. See *Kotzebue, Otto von; Krusenstern,* and *Voyages*. The latest *Voy. autour du Monde* is that of captain Duperrai, in the Coquille, made by command of Louis XVIII., in 1822—25 (six vols. 4to, with an atlas of 375 pages, published in numbers, Paris, 1828).

CIRCUMVALLATION, or LINE OF CIRCUMVALLATION, in military affairs, implies a fortification of earth, consisting of a parapet and trench, made round the town intended to be besieged, when any molestation is apprehended from parties of the enemy which may march to relieve the place.

CIRCUS, among the Romans; an oblong building without a roof, in which public chariot-races and exhibitions of pugilism and wrestling took place. It was rectangular, except that one short side formed a half circle; the entrance was at the opposite end. Within, on each side of the entrance, were six arcades (*carceres*), where the chariots stood. On both the sides, and on the semicircular end, were the seats of the spectators, rising gradually one above another, like steps, and resting on strong arches. At the foot of the seats there was a broad ditch, called *euripus*, to prevent the wild beasts from leaping among the spectators. Within was an open space (*arena*), covered with sand, where the games were exhibited. This space was divided lengthwise into two parts by a wall (*spina*), twelve feet thick and six high, adorned with little temples, altars, statues, obelisks, pyramids, and conical towers. Of these last (*metæ*) there were three at each end, which served as goals, round which the circuits were made. By the first *meta*, opposite the curved end of the circus, there were seven other pillars, with oval balls (*ova*) on their summits. One of these balls was taken down for every circuit. On the outside, the circus was surrounded with colonnades, galleries, shops, and public places. The largest of these buildings in Rome, the *circus maximus*, was situated in the eleventh district of the city, which was thence sometimes called *circus maximus*, and on the spot where Romulus exhibited the games at which the Sabine women were carried off. Tarquinius Priscus projected the plan of this building, and some of the wealthy senators completed it. The *ludi magni* were celebrated in it. Dionysius of Halicarnassus gives its length at 9331½ feet, and the breadth at 2187 feet.

According to Pliny, it was capable of containing 260,000, and according to Aurelius Victor, 385,000 spectators. Julius Cæsar enlarged and ornamented it. Under Nero, it was burnt, and under Antoninus Pius pulled down. Trajan rebuilt it, and Constantine made further additions to it. At present, but few vestiges of it remain. The circus of Caracalla, in the first district of the city, is in the best preservation. See *Hippodrome.*

Circus, games of the (so called from the circus particularly the *circus maximus,* where they were exhibited). Romulus celebrated similar games in honour of Neptune. Afterwards, by the mutual rivalry of the *ædiles,* their splendour was increased. Under the emperors, they attained the greatest magnificence. The principal games of the circus were the *ludi Romani* or *magni,* called, also, from an epithet of Cybele, *megalenses,* which were celebrated from the 4th to the 14th of September, in honour of the *great gods,* so called. The passion of the people for these shows appears from the cry with which they addressed their rulers—*panem et circenses,* (bread and the games!) A splendid procession, or *pompa,* opened the festival. The images of the great gods were carried to the temple of Jupiter, on the Capitoline mount; the procession moved from this temple through the forum and the street called *Velabrum* to the *circus maximus.* The chief magistrate led the procession. Before him was carried the image of the winged goddess of Fortune. (*Fortuna alata.*) Then came the images of Jupiter, Juno, Minerva, Neptune, Ceres, Apollo, Diana; after the death of Julius Cæsar, his image was introduced, and in later times, perhaps, those of the deified emperors also. These images were in splendid covered chariots, drawn by horses or mules, stags, camels, elephants, also sometimes by lions, panthers or tigers. After the pompous procession of gods followed rows of boys, who had lost either father or mother, and who led the horses to be used in the races. After these followed the sons of the patricians, from fifteen to sixteen years of age, armed, part on horseback, part on foot. After these came the magistrates of the city and the senate. The sons of knights, on horseback and on foot, brought up the rear. Then followed the chariots and horses destined for the races, and the different *athletæ,* as pugilists, wrestlers, runners, all naked, except a covering about the loins. In this procession were included the dancers, youths and boys, arranged in rows, according to their age. They wore violet-coloured garments, with brass belts, and carried swords and short spears. The men wore helmets. Each division was preceded by a man who led the windings of the dance. The musicians followed, including a number of persons dressed like Sileni and Satyrs, who, with large wreaths of flowers in their hands, exhibited various sportive dances, with a company of musicians behind them. To this exhibition of wild, unrestrained joy, succeeded the religious pomp. First came the *Camilli;*—boys whom the priest employed in the sacrifices,—then the servants who took part in it; after these the *haruspices,* with their knives, and the butchers, who led the victims to the altar; the different orders of the priests, with their servants; first, the high priest (*pontifex maximus*), and the other *pontifices;* then the *flamines,* then the augurs, the *quindecimviri* with the Sybilline books, the vestal virgins, then the remaining inferior orders of priests, according to their rank. The images of gods brought up the rear; sometimes, also, a pompous show of treasures, the spoils of war. In the circus, the procession went round once in a circle, and the sacrifices were then performed. The spectators took their places, the music struck up, and the games commenced. These were,— 1. Races with horses and chariots. These were so honourable, that men of the highest rank engaged in them. The whole race, in which the competitors were divided into four parties, consisted of twenty-four courses, and each course of seven circuits, making about seven miles. Each party performed six courses, three in the forenoon and three in the afternoon. The chariots were very light, and commonly had two or four horses abreast attached to them. 2. The gymnastic contests. 3. The Trojan games, prize contests on horseback, which Æneas was said to have first instituted, and Julius Cæsar revived. 5. The combats with wild beasts, in which beasts fought with beasts or with men (criminals or volunteers). The expense of these games was often immense. Pompey, in his second consulship, brought forward 500 lions at one combat of wild beasts, which, with eighteen elephants, were slain in five days. 5. Representations of naval engagements (*naumachiæ*), for which purpose the circus could be laid under water.

CISALPINE REPUBLIC. After the battle of Lodi (May 10, 1796), Bonaparte, on the 20th of May, proclaimed the freedom of Lombardy, and formed of it the Transpadane republic; at the same time, Bologna and Ferrara were erected into the Cispadane republic, to which Modena and Reggio were soon after added. February 19th, 1797, by the peace of Tolentino, the pope ceded Bologna and Ferrara, together with Romagna, and the province of Mesola, to the French; the latter were also added to the Cispadane republic. This republic received its constitution March 17th, 1797, and was united with the Transpadane, under the name of the *Cisalpine republic.* By this name the emperor of Germany recognized it as an independent power, at the peace of Campo-Formio (October 17th). It comprised Austrian Lombardy, together with the Mantuan and the Venetian provinces, Bergamo, Brescia, Crema, Verona and Rovigo, the duchy of Modena, the principality of Massa and Carrara, and the three ecclesiastical delegations—Bologna, Ferrara with Mesola, and Romagna. October 22d, in the same year, the Valteline or Veltlin, Worms and Cleves, belonging to the Grisons, were added; so that the new republic, which was divided into ten departments, comprised 16,337 square miles and three and a half millions of inhabitants. The legislative body, composed of a council of eighty elders, together with another council of 160 members, and the directory (*directorium*), held their sessions in Milan. The army (French troops in the pay of the republic) amounted to 20,000 men. In March, 1798, it was more closely connected with France by a defensive and offensive alliance, and a commercial treaty. On the renewal of the war between Austria and France, in March 1799, it was disunited, for a short time, by the successes of the Austrians and Russians, but soon restored by Bonaparte's victory at Marengo (June 14th, 1800). The republic then received a deliberative body (*consulta*) of fifty, and an executive council (*governo*) of nine members. On the 6th of September, it was enlarged by the addition of the Novarese and Tortonese, and, at the peace of Lunéville (February 9th, 1801), was again acknowledged by Austria. January 25th, 1802, it received the name of the *Italian republic,* and elected Bonaparte president, and Francis Melzi d'Erile vice-president. It was then divided into thirteen departments; but, in 1805 (March 17th), a deputation of the Italian republic conferred on the French emperor the dignity of *king of Italy* (see *Italy*), after which Napoleon was styled *empereur des Francais et roi d'Italie.*

CISPADANE REPUBLIC. See *Cisalpine Republic.*

CISPLATANA, with Monte-Video. See *Paraguay* and *Plata, Republic of.*

CISRHENISH REPUBLIC. Several towns on the Rhine, particularly Cologne, Aix-la-Chapelle and Bonn, at the time when so many republics were created, declared themselves independent, under French protection, and took the title of *Cisrhenish republic*, in September, 1797. But at the peace of Campo-Formio (Oct. 17, 1797), the left bank of the Rhine, including the Cisrhenish republic, was ceded to France, by a secret article, and the confederation bearing this name is, in consequence, hardly known.

CISTERCIANS; a religious order, which takes its name from its original convent, *Citeaux*, not far from Dijon, where the society was formed in 1099. Through the exertions of St Bernard de Clairvaux (q. v.), it had increased so much, 100 years after its origin, as to embrace 800 rich abbeys, in different countries of Europe. The Cistercians dedicated themselves to a contemplative life. Their rule was severe. They succeeded in freeing themselves from the superintendence of the bishops, and formed a kind of spiritual republic. A high council, consisting of the abbot of Citeaux as superior, the abbots of Clairvaux, La Ferte, Pontigni and Morimond, all in France, and twenty other *definitores*, governed the body, under the immediate superintendence of the pope. In France, they called themselves *Bernardines*, in honour of St Bernard. Among the fraternities emanating from them, the most remarkable are, the Barefooted monks, or Feuillans (q. v.), and the nuns of Portroyal (q. v.), in France, the Recollets, reformed Cistercians, in Spain, and the monks of La Trappe (see *Trappists*). Riches and indolence brought on the decline of this order. Many of their convents ceased to exist before the Reformation, still more afterwards, partly by gradual decay, partly by falling into other hands. The general fate of the religious orders, during the period of the French revolution, reduced the Cistercians to a few convents in Spain, Poland, the Austrian dominions, and the Saxon part of Upper Lusatia. They wear white robes with black scapularies.

CITADEL, or CITTADEL (a diminutive of the Italian *città*, city; signifying *little city*), in fortification; a kind of fort, consisting of four, five, or six sides, with bastions, commonly joined to towns, and sometimes erected on commanding eminences within them. It is distinguished from a castle by having bastions.

CITRIC ACID (*acidum citricum*) exists, in variable proportions, in the lemon, orange, and the red acid fruits. This acid is white, crystallizes in rhomboidal prisms, unalterable in the air, inodorous, of a very acid taste. Specific gravity, 1.034. According to Messrs Gay-Lussac and Thénard, it is composed of carbon, 33·81, oxygen, 59·859, and hydrogen, 6.330. Heated, it is decomposed, and is partly changed into a new acid, called *pyro-citric*. It is very soluble in boiling water, and in three-fourths of its weight of cold water. Alcohol dissolves a smaller proportion. The aqueous solution, concentrated in a small degree, is easily altered on exposure to the air. It is obtained by saturating the lemon juice with pulverized chalk, and treating the insoluble citrate which is formed, by diluted sulphuric acid. It is employed instead of lemon juice for making lemonade, and it acts then like the other refrigerant medicines. In large doses, and concentrated, it might produce serious accidents, on account of its caustic action.

CITRON. The citron, lime, and lemon are different varieties of the fruit of a small evergreen shrub, the original or parent stock of which (*citrus medica*) was imported from Asia into the southern parts of Europe. The citron is oblong, with a very thick rind; the lemon is oblong, with a small lump or protuberance at the end; and the lime has no protuberance, has a very thin rind, and is about the size of a small egg. These are the principal marks of difference betwixt these fruits, but they are not quite constant. The lemon shrub has large and slightly-indented shining leaves, of somewhat oval shape, but pointed, and on the footstalks of the leaves there is no remarkable appendage. The flowers are large and white, but purplish on the outside of the petals.

It is generally supposed that the citron-tree was first introduced from Assyria and Media into Greece, and thence into the southern parts of Europe, where it is now cultivated to considerable extent. It is also raised in the islands of the West Indies. The fruit, partaking of the same quality as the lemon, with the exception of being somewhat less acid, is seldom eaten raw, but preserved in sugar, as a sweetmeat, is much used by confectioners and others. It is also occasionally employed in medicine. The lemon is a native of Upper Asia, from whence, like the citron, it was brought into Greece, and afterwards transplanted into Italy. The juice, which is one of the sharpest and most agreeable of all acids, is used in cookery, confectionary, medicine, and various other ways. By calico-printers, it is very extensively employed, as a discharger of colour, to produce, with more clearness and effect, the white-figured part of coloured patterns dyed with colours formed from iron. The juice is procured by simply squeezing the fruit, and straining it through linen or any loose filter; and in Sicily and other parts of the Mediterranean, it forms an important article of commerce. Being one of the most valuable remedies for the scurvy with which we are acquainted, it generally constitutes part of the sea-stores of ships that are destined for long voyages. Several different modes have been recommended for the preserving of lemon-juice. One of these is, to put it into bottles with a small quantity of oil, which, floating on the surface, prevents the immediate contact of the air, and retards the decomposition of the acid, though the original fresh taste soon gives place to one which is less grateful. In the East Indies, lemon-juice is sometimes evaporated, by a gentle heat, to the consistence of a thick extract. Sometimes it is crystalized into a white and acid salt; but what is sold in the shops under the name of *essential salt of lemons*, for taking out ink stains and iron-mould spots from linen, is only a preparation from the juice of sorrel. The external part of the rind has a grateful aromatic and bitter taste, which renders it useful in cookery. When dried, it is considered a good stomachic, promotes the appetite, and is otherwise serviceable as a medicine. It is often candied and made into a sweetmeat, under the name of *lemon chips*. In distillation, it yields a light and almost colourless oil, which, in smell, is nearly as agreeable as the fresh peel, and is frequently employed as a perfume. Lemons are sometimes preserved in sirup. Small ones, with thick rinds, are converted into a grateful pickle. Marmalade and sirup are also made of them. For the purpose of keeping the fruit, it is recommended that a fine pack-thread, about a quarter of a yard long, should be run through the protuberance at the end of the lemon. The ends of the string are to be tied together, and suspended on a hook, in an airy situation, in such a manner that the lemon may hang perfectly free and detached.—The cultivation of the lime is much attended to in several parts of America and the West Indies. Its juice affords a more grateful acid than that of the lemon.

CITTA, in geography; the Italian word for *city*, which is used in many proper names of ci-

ties, as *Citta Castellana, Citta Ducale, Citta Nuova,* &c.

CITY, in history. Mankind have been twice indebted for civilization and liberty to cities. With them civilization and political institutions began, and in them were developed the principles of democracy or of equal rights in the middle ages. The origin of cities belongs to the earliest period of history. According to Moses, Nimrod built three, among which Babylon was the most important. The Jews believe, though without foundation, that Shem erected the first city after the deluge. At the commencement of society, the form of government was patriarchal. The ruler was the head of the family or clan. Relationship, the innate wish of men to live in society, and, more, perhaps, than both these causes, the necessity of providing means of defence against more powerful clans, brought together separate families into one spot. The fertility of the East, also, was an inducement to men to give up the rambling life of nomades, and to form permanent settlements. These settlers began to barter with those tribes who continued to wander with their herds from place to place. Thus cities sprung up. These were soon surrounded with walls, to prevent the inroads of the wandering tribes. The bond of connexion between their inhabitants thus became closer, and their organization more complete. As by degrees the chiefs of these family-states died away, the citizens began to elect the most able or most popular men for magistrates, without respect to birth or descent. Thus political institutions began to assume a systematic character. The earliest form of government succeeding the patriarchal state was probably monarchical. In this, the religious, paternal, and political authority remained rudely mingled. The authority of the king was weak, his connexion with the different parts of his dominions imperfect, and the progress of civilization was promoted almost solely by the growth of the cities. These gave rise to the division of labour, the refinements of social intercourse, the development of laws caused by the conflicting interests of many people living close together, the idea of equality of rights, the diminution of awe for a distant monarch, the growth of patriotism, springing from the sense of advantages enjoyed, and the exertions necessary to maintain them. These were the salutary consequences of the establishment of cities. Under the mild sky of Asia, Africa, Greece, and Italy, cities were built first, and in the greatest number. The Phœnicians and Egyptians particularly distinguished themselves by the erection of cities, which soon attained a high degree of wealth, and consequently of civilization. The Egyptians considered their city Diospolis (Thebes) older than any of the Greek cities, and Pliny says that Cecropia (erected in Attica by Cecrops, 1582 B. C., and afterwards called *Athens*) was the oldest city of Greece. Heeren justly remarks, that the rise of cities was the most important source of the republicanism of antiquity. This is particularly true of Greece. In fact, cities are, by their very nature, of a republican tendency. Several confederations of cities existed in the ancient world; for instance, the Phœnician, consisting of the cities of Tyre, Sidon, &c., and the Achæan league, formed by the most important cities of Greece, in order to strengthen themselves against the power of Macedon. Under Augustus and his successors, the Romans began to establish colonial cities in Germany, having done the same long before in Gaul, Spain, Africa, &c. In Switzerland, they first erected cities about A. D. 70, which, however, were mostly laid waste by the Alemanni, and subsequently rebuilt under the government of the Franks (A. D. 496). The Germans, accustomed to a wild, rambling life, did not show any disposition to live in cities, until Charlemagne laboured to collect them together in settled abodes, from his desire to civilize them. Henry I. distinguished himself particularly in this way, and, on this account, has been called, by some, *Henry the City-builder* (*der Stadeerbauer*). He gave the cities great privileges, in order to induce his subjects to live in them, and thus laid the foundation of that power, which, at a future period, contributed most to break down the feudal system. In many cities, imperial castles were erected to protect the inhabitants, and the insupportable oppressions and even cruelties exercised by the feudal lords upon their peasants, or by the wandering knights and robbers, drove many people into the cities. The attacks of the neighbouring lords gave firmness to their union, and compelled them to cultivate their resources. Commerce and the various arts and trades were soon cultivated within their walls, and their wealth and respectability increased. They soon became sensible of the want of a better system of laws and political administration than prevailed around them, and the principle of equal rights and laws was quickly developed.

One of the most important remnants, if not the most important, of the great fabric of ancient civilization, was the cities of Italy. What the world would have become without them is not to be calculated. In spite of their bloody contests with each other, and the vices to which these gave rise, they must be considered as having lighted the torch of modern civilization. It was not the monarchies, it was not the courts of the great princes, it was the cities of Northern Italy, which opened the way for the progress of improvement; and the petty princes of Italy caught from them the spirit which prompted their efforts to promote it. Under the reign of Conrad III. (1138—52), the cities of Lombardy, and particularly Milan, which stood at their head, had acquired a high degree of wealth and power, and had formed themselves into a confederation. The struggles between the emperors and these cities form one of the most important portions of the history of the German empire and of Italy. Frederic I. in vain demolished the powerful city of Milan. It was soon rebuilt, and the cities of Lombardy, in alliance with the pope, obliged the emperor to conclude with them a very disadvantageous peace at Constance. Two other confederations of cities, highly important, were formed during the *interregnum* of the German empire, between 1256 and 1272. One of them was the powerful Hansa, or Hanseatic league (q. v.); the other, the confederacy of the High German and Rhenish cities, from the foot of the Alps to the mouth of the Mayne, established by Walpode of Mentz, in 1255. A similar confederacy, and a very important one, was that of the Suabian cities, instituted in 1488, to repel the outrages of the feudal lords and knights. By degrees, the cities acquired, in the different countries of Europe, the right of representation in the legislative bodies; and wealth, industry, knowledge, and equal laws, spread from them through Europe. But the cities of Lombardy, though still flourishing and wealthy, had fallen, for the most part, under the rule of single families; their republican governments vanished, and their confederation was dissolved. The associations of German cities experienced a similar fate. By the peace of Westphalia, the princes of the German empire were declared sovereign powers, and the more their authority increased, the more did the relative weight of the cities diminish. These had formerly suffered from the oppressions of the feudal lords. They were now the victims of the policy of the neighbouring princes, whom envy often led to adopt the most unwar-

rantable measures against the cities, many of which had lost their independence before Napoleon dissolved the German empire. He took away the privileges of those which remained free; and the congress of Vienna restored freedom to Lubeck, Hamburg, Bremen, and Frankfort, only because the different powers could not agree to whom they should be assigned. At the same time, Cracow (q. v.) was declared an independent city, with a republican form of government. (For further information, see the articles *Germany* and *Italy*.) The following works contain much information on the rise and progress of cities:—Fr. Kortum's History of the Origin of the Leagues of the Free Cities in the Middle Ages and in Modern Times (in German), Zurich, 1829; Eichhorn on the Origin of the Cities of Germany, in his periodical *Ceitschrift fur geschichtliche Rechtswissenschaft*, vol. i. page 147 et seq. Von Savigny, Schott, and others, have written on this interesting subject.

Cities, considered in regard to politics. Cities, as we have already said, naturally develope the democratic principle, and, on this and several other accounts, are to be considered among the firmest supports of liberty. Well organized municipal institutions, in which the government is in the hands of the citizens, afford continual nourishment to the spirit of freedom throughout a country, and, in fact, are more important, in this point of view, than the mere possession of legislative privileges. Wise nations, therefore, have bestowed the greatest attention on the establishment of free, well-organized municipalities, while others have neglected this, in their zeal to secure the right of representation to the people at large. The importance of cities, in this respect, makes it very difficult, in a constitutional monarchy, to combine the necessary liberty of municipalities with the prerogatives of the monarchs. In France, this has been a point of contest and legislation ever since the establishment of the charter.

Medical Statistics of Cities. [The following account of the comparative mortality in large European cities is given in the October number of the Medico-Chirurgical Review, London, 1829.] It is well known, that, in any given country, the deaths in a city are more numerous than those in the rural districts. This difference is principally felt in the first five years of life, when many more die in London than in the country. From five years of age to twenty, the deaths in London are fewer. Between twenty and fifty, many more die in London, on account of the large annual influx from the country. In all cities, a large portion of disease and death is to be assigned to the constant importation from the country of individuals who have attained to maturity, but, having been previously habituated to frequent exercise in a pure atmosphere, and to a simple, regular diet, are gradually sacrificed to confined air, sedentary habits, or a capricious and over-stimulating diet. These causes are not equally fatal to those who have passed their early years within the walls of a city; and, after the age of fifty, the proportion of deaths in London is smaller than in the country. Jenner, and, very recently, doctor Baron, have made some curious experiments on animals, which indicate that a loss of their open range and natural nourishment has, with them also, a tendency to disorganize and to destroy. Doctor Baron placed a family of young rabbits in a confined situation, and fed them with coarse green food, such as cabbage and grass. They were perfectly healthy when put up. In about a month, one of them died. The primary step of disorganization was evinced in a number of transparent vesicles, studded over the external surface of its liver. In another which died nine days after, the disease had advanced to the formation of tubercles on the liver. The liver of a third, which died four days later still, had nearly lost its true structure, so universally was it pervaded with tubercles. Two days subsequently, a fourth died. A considerable number of hydatids were attached to the lower surface of the liver. At this time, doctor Baron removed three young rabbits from the place where their companions had died to another situation, dry and clean, and to their proper and accustomed food. The lives of these remaining three were obviously saved by this change. He obtained similar results from experiments of the same nature performed on other animals.—In *Glasgow*, the aver age annual mortality is about one in forty-four persons.—In *Paris*, the poor and the rich occupy the two extremities of the scale. The mortality in the one is nearly double that in the other. The average is one to thirty-two. The number of violent deaths, in 1823, was 690, of which 390 were cases of suicide. Reviewing on one side, the great political, moral, and physical events which have occurred at Paris during a succession of years, and, on the other, the progress of its population, Villerme has ascertained, that whenever the people have suffered from any cause, the deaths have correspondingly increased, the births have decreased, and the mean duration of life has been shortened. In periods of prosperity, he has found results directly opposite to these. The mean duration of life in Paris is thirty-two years and some months. It was formerly estimated that one-third of the inhabitants of Paris died in the hospitals; but Dupin has lately calculated that half the deaths in Paris take place in the hospitals and other asylums of charity. Not a fourth part of the inhabitants are buried at private cost.—In *Geneva*, the average mortality for the four years ending in 1823 was one in forty-three, which is a greater mortality than in some of the largest manufacturing towns, as Glasgow, Manchester, and Birmingham.—*Petersburg*. It is curious that the burials exceed the births in the Russian capital, by 134 to 100. The Russians attempt to explain this by the annual influx of persons from the provinces. But this influx is not peculiar to St Petersburg. The last mentioned city and Stockholm are the only known metropolitan cities which present the preponderance of death over production. The annual mortality of the Russian capital is one in thirty-seven.—*Berlin*. From 1747 to 1755, the annual mortality of Berlin was one in twenty-eight. Between 1726 and 1799 it improved to one in twenty-nine one-eleventh. Here the beneficial change was retarded by the ravages, the losses, the disappointments of war, and from 1802 to 1806, it had retrograded to one in twenty-seven; but from 1816 to 1822, a period of exultation and tranquillity to the Prussians, the value of life took a remarkable leap, and the annual deaths fell to less than one in thirty-four.—*Vienna*. In the middle of the last century, the mortality of Vienna was one in twenty, and it has not improved in proportion as other cities of Europe. According to the most recent calculations, it is, even now, as one in twenty-two one-half. Among 10,530 deaths, scarcely thirty-eight persons are found to have attained the age of ninety. The spirit of excessive regulation, the dread of novelty, the restrictions imposed on the medical profession, and political causes which need not be enumerated, appear to have retarded the natural progress of this city. The overweening paternity of the government interferes with the trivial concerns of the citizens, in the same manner in which an arbitrary and untaught father sometimes restrains the useful impulses of his children, while he permits an easy vent to their baser propensities.—*Prague*, the capital of Bohemia, has only one-third the population of Vienna, and is

much healthier. The superior longevity of the Jews is strongly marked in this city. One death is annually observed among twenty-six of the Israelites, and one in twenty-two and one-half among the Christians. Instances of considerable longevity, especially among the women are not rare. Contrary to the usual observation, longevity is confined to poverty and married life. According to an average of several years, no nobleman, no wealthy person, no bachelor, and no unmarried woman, has passed the age of ninety-five. This is an interesting fact, but it is an extreme and an insulated one, and does not militate against the general conservative tendency of prosperity, which a variety of evidence seems to establish.—*Palermo.* Mortality is here one in thirty-one. January, October, and November are the most fatal months; April, May, and June the most healthy.—*Leghorn.* The average annual mortality here is one in thirty-five. Among the Protestants and Jews, it is only one in forty-eight, which is attributed to their greater affluence.—*Rome.* From a recently recovered fragment of Cicero (*De Republica*), an intimation is conveyed that the neighbourhood of Rome has been always unhealthy. Speaking of the choice of situation made by Romulus, he observes—*locum delegit in regione pestilente salubrem.* The population appears to have been gradually decreasing till the last peace, which has greatly revived it. In 1800, there were 150,000 souls; in 1810, only 123,000. Within a few years, it has gained 10,000. The annual mortality is about one in twenty-five. There can be little doubt that the force of the aguish disposition of Rome might be considerably weakened by steady and well-directed efforts, supported by a proportionate capital; but it is to be feared that such a combination of circumstances will not readily meet at Rome. In 1816, seventeen out of the twenty-two French students were attacked with intermittent fevers. The Villa Medici, in which they reside, was formerly healthy; but water brought at a great expense to embellish the garden, had been suffered to stagnate there.—*Naples.* The annual mortality here is one in twenty-three; a fact that one would not have expected in such a delightful situation, compared with pestilential Rome, where the mortality is less. The population of Naples is nearly three times that of the ancient mistress of the world. —*Brussels.* The average mortality is very great, being one to twenty-six.—*Amsterdam.* The population of this once great city is decreased, in consequence of declining commerce and political changes. And it is not a little curious, as well as melancholy, to observe that its mortality has increased with the progress of decay. In 1777, the ratio of mortality was one in twenty-seven—a period when Amsterdam was one of the healthiest as well as one of the most flourishing cities of Europe. The deaths have now increased to one in twenty-four, and Amsterdam is one of the least healthy as well as the least prosperous seaports of Europe. A decree was issued, that, after the 1st of January, 1829, no burials shall be permitted in towns or churches throughout North Holland.—*Stockholm.* Drunkenness appears here, as at Berlin, to produce a large share of the mortality. In a recent year, this city exhibited a singular instance of an excess of 1439 more deaths than births—a symptom which it is painful to observe in a brave and industrious people. This disproportion existed particularly amongst the garrison, and is ascribed to the immoderate use of brandy. Our authority affirms that this vice destroys the happiness and prosperity of Sweden more effectually than any war has ever done.

The medical police of large cities deserves particular attention, because the health of multitudes depends upon the care which is taken by the magistrates to remove the causes of disease which originate in a great population. Knowledge of this branch of medical science can be obtained only by attentive observation, and the study of the different health regulations of large cities under governments which have paid particular attention to it.

Cities, in a moral point of view. Much has been said, written, and preached against the immorality of large cities, and the fact cannot be denied; but immorality is not confined to them. The petty vices of small places, though less glaring, are, perhaps, equally injurious; making up in constant repetition for their comparatively less degree of noxiousness. It is much more difficult, moreover, to preserve one of the most important possessions, independence of character, in a small place than in a large one. The cry against the immorality of large cities should not make us forget the many great and admirable things which mankind have been enabled to perform by means of the collected strength or talents and resources combined in large cities, and their influence in forming the character of great men, who could not have acquired elsewhere the variety of accomplishment, and the well-proportioned cultivation of their various faculties. At the same time, we must allow that it is a very injurious policy to strip a whole country of all which illustrates and ennobles it, in order to swell the treasures of the capital. See *Capital.*

CIUDAD, and CIVIDAD, in geography, the Spanish word for city, from the Latin civitas, appears in many names of Spanish places; as, *Ciudad-de-las-Palmas*, or *Palmas* (capital of the island of Grand Canary), *Cividad-Real*, &c.

CIUDAD-RODRIGO (anciently, *Lancia*, or *Mirobriga*); a fortress in Spain, in Leon, on the river Aguada; 45 miles S. S. W. Salamanca; lon. 6° 33′ W.; lat. 40° 25′ N.: population, 11,000. It is a bishop's see. It was built by Ferdinand II. as a rampart against Portugal, from which it is only about eight miles distant. The fort, containing 6000 men, was surrendered to the French under Masséna, July 10, 1810, having been bombarded twenty-five days; and Jan. 19, 1812, it was taken by storm by the British, under lord Wellington, after a siege of eleven days. The cortes gave Wellington the title of *duke of Ciudad-Rodrigo*, and the rank of a grandee of Spain, of the first class.

CIVET (*viverra*, Lin.); a genus of carnivorous, mammiferous quadrupeds, natives of the torrid regions of the ancient continent, particularly distinguished by having a secretory apparatus, which forms a powerfully odorous matter, known by the name of *civet.* In general appearance, the species of this genus remind one of the fox, which they also resemble in habits; but the tail is long, hairy and cylindrical, and the claws though by no means so acute as those of the cat, are still partially retractile, or cat-like. The resemblance of the *viverra* to the feline race is increased by the pupils of the eyes, which contract in a straight line, and by the colour of the skin, which most species have banded or spotted with black upon a deep yellow or dun-coloured ground. The tongue is studded with stout, horny prickles, and the ears are of middling size, straight and rounded to their tips. The pouch, situated near the genitals, is a deep bag, sometimes divided into two cavities, whence a thick, oily, and strongly musk-like fluid is poured out. They are nocturnal, and prey upon birds and small animals, and may be considered as forming the transition from the musteline or marten kind to the feline race. The genus has been divided into two sub-genera by naturalists, the first comprising the true *civets*, those having the pouch

large and well marked; the second including the *genets*, in which there is a simple depression, instead of a pouch. Two species of the first, and eight of the second, are at present known. Their individual peculiarities may be seen in Desmarest's Mammalogy, p. 205. The odoriferous substance which these animals yield, called, from them, *civet*, when good, is of a clear yellowish or brown colour, and of about the consistence of butter: when undiluted, the smell is powerful and very offensive, but, when largely diluted with oil or other materials, it becomes an agreeable perfume. At a time when perfumes were more fashionable than they are at present, civet was very highly esteemed, being, by many, even preferred to musk. Young civet-cats were purchased by the drug dealers of Holland, England, &c., as we are informed by Lemery, and brought up tame for the sake of the civet, "so that a cat which is large and gentle may come to be valued at between four and eight pounds sterling." M. Pomet, in his history of drugs, relates that he was presented by a friend with a civet-cat, obtained in China in 1683. "Having kept this creature some days, I perceived that the walls and bars that enclosed it were covered with unctuous moisture, thick, and very brown, of a very strong and disagreeable smell, so that, during all the time I kept this animal, I took care to gather the civet out of the pouch every other day, not without some trouble or hazard, because it put the creature to some pain or apprehension of it; and having done so for months, I had about the quantity of an ounce and a half; but it is certain, that, if the necessary care had been taken, and the beast could be hindered from rubbing itself, I might have got a great deal more." The medical virtues once attributed to the civet were numerous and various; but, in course of time, it has been entirely laid aside, even as a perfume; so that, at this time, the words of the dramatist, "Give me an ounce of civet, good apothecary, to sweeten my imagination," might be frequently repeated, even in our large cities, with slight probability of obtaining the article.

CIVIC CROWN; among the Romans, the highest military reward, assigned to him who had preserved the life of a citizen. It bore the inscription *Ob civem servatum*, and was made of oak leaves.

He who was rescued offered it, at the command of his leader, to his preserver, whom he was bound to honour afterwards as a father. Under the emperors, it was bestowed only by them. Various marks of honour were also connected with it. The person who received the crown wore it in the theatre, and sat next the senators. When he came in, all the assembly rose up, as a mark of respect. The senate granted to Augustus, as a particular mark of honour, that a civic crown should be placed on the pediment of his house, between two wreaths of laurels, as a sign that he was the constant preserver of his fellow citizens and the conqueror of his enemies. Similar honours were also granted to Claudius.

CIVIL LAW.—I. The Romans understood by this term nearly the same as, in modern times, is implied by the phrase *positive law*, that is, the rules of right established by any government. They contradistinguished it from natural law (*jus naturale*), by which they meant a certain natural order followed by all living beings (animals not even excepted), also from the general laws of mankind, established by the agreement of all nations and governments (*jus gentium*). In this sense, therefore, it embraced the whole system of Roman law, both the private law (*jus privatum*), which relates to the various legal relations of the different members of the state, the citizens, and the public law (*jus publicum*), that is, the rules respecting the limits, rights, obligations, &c., of the public authorities.—II. As, however, the laws of any state, particularly such a one as Rome, can rest only in part on positive and special decrees, and must always be developed, in a great measure, by the customs, and religious and philosophical opinions of the nation, and the decisions of the courts, further distinctions soon grew up. The supreme administration of justice in Rome was in the hands of the pretors; and these officers, on account of the paucity of positive enactments, soon acquired the power of supplying their deficiencies. To quote the words of Gibbon—"The art of respecting the name and eluding the efficacy of the laws was improved by successive pretors; and where the end was salutary, the means were frequently absurd. The secret or probable wish of the dead was suffered to prevail over the order of succession and the forms of testaments, and the claimant who was excluded from the character of heir, accepted, with equal pleasure, from an indulgent pretor, the possession of the goods of his late kinsman or benefactor. In the redress of private wrongs, compensations and fines were substituted for the obsolete rigour of the twelve tables, time and space were annihilated by fanciful suppositions, and the plea of youth, or fraud, or violence, annulled the obligation or excused the performance of an inconvenient contract. A jurisdiction thus vague and arbitrary was exposed to the most dangerous abuse. But the errors or vices of each pretor expired with his annual office; and such maxims alone as had been approved by reason and practice, were copied by succeeding judges." The pretors made an annual declaration, at the commencement of their term of office, of the principles according to which they intended to administer justice (*edictum prætoris*). This was publicly exposed on a table (*album*), and uniformity was maintained in the series of pretorian edicts by the legal spirit of the nation. Under the emperor Adrian, a new publication of the pretorian edict, unalterable from that time (*edictum perpetuum*), took place, respecting the real extent of which scholars do not agree. The whole body of rules and remedies established by the pretors, whose jurisdiction resembled, in some respects, that of the courts of equity of England, was called *jus honorarium*, and was opposed to the strict formal law (*jus civile*). (*See the next paragraph of this article.*)—III. The Roman law, in the shape which it assumed after the whole was digested in the 6th century A. D., under the emperor Justinian, was fully and formally admitted as binding in only a small part of Italy; but both here and in other ancient portions of the empire, it retained great influence, even after the Teutonic tribes had established new governments in the territorities which had been under the dominion of Rome. In the south of France, the collection of imperial decrees and decisions which Theodosius II. (A. D. 438) had prepared, remained valid, also, under the Goths. Savigny's History of the Roman Law in the Middle Ages (Heidelberg, 1822, et seq., 4 vols.) exhibits great research into the subject of the continuance and the revival of this law. After the 11th century, Upper Italy, particularly the school of Bologna, became the point where the body of the Roman law,

put together by the emperor Justinian, was formed by degrees into a system applicable to the wants of all nations. This system was introduced into almost all the countries of Europe, because the want of a well-digested body of law was seriously felt. After this model the ecclesiastical and papal decrees were arranged, and, to a considerable degree, the native laws of the new Teutonic states. From all these the Roman law was distinguished, under the name of *civil law*. In this respect, therefore, *civil law* means (*ancient*) *Roman law;* it is contradistinguished from *canon law* (q. v.) and *feudal law*, though the feudal codes of the Lombards have been received into the *corpus juris civilis*. (Respecting the present form of the collections of Roman law, see the article of *Corpus juris*).—IV. As the Roman code exerted the greatest influence on the private law of modern Europe, the expression *civil law* is also used to embrace all the rules relating to the private rights of citizens. Under the term *civil law*, therefore, on the continent of Europe, is to be understood, not only the Roman law, but also the modern private law of the various countries; e. g., in Germany, *Das gemeine Deutsche Privatrecht;* in France the *Code civil des Francais* or *Code Napoléon*. In this sense, it is chiefly opposed to *criminal law*, particularly in reference to the administration of justice, which is to be divided into *civil justice* and *criminal justice*. Having made these few remarks on the name and character of the civil law, we shall now proceed to a more particular account of its history.

The history of the Roman law, embracing its gradual development, its final completion under the later emperors, particularly under Justinian, and the great effects which it has exerted even down to the present period in Europe, is a most interesting and important subject. Rome may be said to have thrice conquered the world, namely, by its arms, by its laws, and by the decrees promulgated from the papal chair. The dominion of its laws has been the best founded and the most extensive. The Roman laws may be formally abolished, but their influence can never cease. Their effect is as permanent as that of Grecian art. At the same time, it is not to be denied, that the introduction of the civil law has, in the case of several nations, obstructed the development of their own peculiar systems of law, and in this respect produced evil consequences; but such is the nature of great agents which are beyond the control of human power. An acquaintance with a more perfect language, a more beautiful style of art, and we might even say, with a purer religion, has likewise prevented the growth or completion of many institutions and modes of action, which might have borne noble fruits.—In considering the history of the civil law, as, in fact, of any system of law which has sprung from the wants of the people among whom it grew up, we must take into view the public law and political history of the state, and the growth of its civilization. The commencement of the history of Rome offers little that is original. Its institutions were such as existed in all the neighbouring states. Greek views predominated throughout. The royal authority fell in Rome, as it had fallen in all the Greek governments, and the division of the nation into a hereditary body of nobles, and a comparatively powerless community of citizens, gave rise to numerous and lasting struggles. The real character of the internal constitution of Rome will afford, even after the ingenious and deep researches of Niebuhr, in his Roman History, ample opportunity for learned investigation. If manly firmness (*virtus*) constituted the *beau ideal* of a genuine Roman, the same quality was the basis of the Roman laws. These laws did not consider the individual principally in his connexion with others, like the ancient German laws, which give a value to the individual chiefly as a member of a family or a community, but at an early period, treated every one as an independent member of society, the head of a family, free from the restraints of relationship, or membership of corporations. Institutions like those of the Germans, recognizing a property common to a family or a corporation, hereditary or entailed, a body of attendants attached to the lord, feudal services, unequal right of inheritance among children, &c., are not to be found in the civil law. The relation between patricians and plebeians, between patrons and clients, was very different from the feudal connexion. The expulsion of the kings was at first of advantage only to the higher classes of citizens (A. U. C. 245), but, only 15 years afterwards (A. U. C. 260), these were obliged to grant to the other citizens the college of the tribunes and the right of holding deliberative assemblies, which opened the way for the great compact of the twelve tables, drawn up by patrician decemvirs (A. U. C. 303, 304), which the ancients considered as establishing equality of rights, though it was not till some years afterwards, that the patricians and plebeians were allowed to conclude valid marriages with each other (*lex Canuleia*, A. U. C. 309); and not till a much later period were plebeians capable of being elected consuls (A. U. C. 387). An important point of that fundamental law or charter, if we may give it a modern name, was the establishment of such an order of legal procedure, that the poorer class of citizens, and particularly those living without the city, should not, as had been too often the case, suffer from their causes being hurried through the courts. Another important point was the settlement of the legal independence of the individual. Eighty years after the plebeians had been made capable of being elected to the consulship, the senate was obliged to acknowledge the validity of the people's decrees (*plebis-scita*), by the *lex Hortensia* (A. U. C. 468); and from the first appointment of a *prætor urbanus* (A. U. C. 367), it was customary, as we have already said, for this officer to give public notice, annually, at the beginning of his term of office, of the principles according to which he intended to decide the cases that should fall within its jurisdiction. These edicts of the pretors, in which the same rules, with few exceptions, were uniformly adopted, were a better means of keeping the system of laws in a constant state of development, than special decrees would have been. By this means, there grew up, besides the positive law (*jus civile*, in the stricter sense of the word), a whole body of acknowledged principles, a common law (*jus honorarium*), which supplied the chasms of the positive ordinances, mitigated their severity, or paved the way for the necessary reforms. Though the ancients, e. g., Cicero, mention the great accumulation of these positive laws, yet their number, at least as far as respected private rights, appears very small, compared with the laws of modern times. It was only as it regarded the regulation of public relations that there existed in the time of the republic such a mass of laws, that Cæsar thought it a meritorious work to bring them into a system. But it ought not to be forgotten, that the necessity which existed at that time, of impressing the whole body of decisions on the memory of the lawyer, made the mass become troublesome much sooner than it would if there had been collections of laws, abridgments, digests, registers, &c. For the purpose of making legislative enactments, there existed in the republic two concurrent authorities—the meeting of the citizens (*plebs*, under the tribunes, *in comitiis tributis*, whose resolutions are called *plebis-scita*), and the senate (whose de-

crees are called *senatus consulta*). In the beginning, the provinces of the two were so separated, that each one passed decrees only upon its own affairs and relations; but very soon it became necessary to acknowledge mutually a common authority (*lex Hortensia*, A. U. C. 468). However, as long as Rome remained a republic, the interference of the senate in the enactment of laws was comparatively rare. After the great internal convulsions had broken out, the conquerors endeavoured to establish their authority more firmly, and to gain the favour of the people, by making important reforms in the laws, particularly those which concerned the punishment of crimes and political offences, the regulation of legal processes, and some abuses in the public administration. This was done by Sylla (*leges Corneliæ*, A. U. C. 673), by Cæsar (A. U. C. 708—710), but much more by Augustus, in whom, from the year of Rome 723, the power of all the branches of government, and the direction of the senate and of the meetings of citizens were united (*leges Juliæ*). To the laws, strictly so called, previously customary (the *leges*, approved by the citizens), and the decrees of the senate, now were added the special ordinances (*constitutiones*) of the emperors, besides which the pretors in Rome and in the provinces still retained the right of contributing, by their edicts, to the development of the legal system. As soon, however, as the monarchical government became settled, the forms of the republic gradually disappeared. In the reign of Tiberius (A. U. C. 767—790, A. D. 14—37), no *leges* are to be found after the year 777, and, 200 years later, the *senatus consulta*, also, merged entirely in the imperial decrees, constitutions, and rescripts. The annual edicts of the pretors, till then customary, were collected under Adrian (A. U. C. 884, A. D. 131), by the jurisconsult Salvius Julianus, into a form which was made unchangeable, called the *edictum perpetuum*. It is worthy of remark, that though, after Augustus, the most absolute despotism had become established in all public relations, and the penal laws had been made mere instruments of despotism, this very time is the most brilliant period of the scientific development of the civil law. This period begins with Augustus, but the brightest part of it falls under the Antonines (from twenty-three B. C. until 180 A. D.) and one or two succeeding emperors. The great names of Caius, Papinian, Ulpian, Paulus, belong to this last period. When the political privileges of the citizen had no guarantee but the good disposition of the emperors, which often proved a very imperfect security, the laws which regulated the relative rights of individuals, and protected them from mutual wrong, were continually approaching perfection. This subject deserves a more thorough investigation than it has yet received. All legal relations were expressed with admirable skill and consistency in distinct definitions, and the whole system was developed from a few principles, which run through the whole, and the distinctness and simplicity of which are proved by the adoption of the Roman law among so many different nations. The process of development was in so far historical, as it was always connected with an adherence to the old forms, but it was entirely philosophical and rational, as it always strove to find out the real principles of rights and obligations, and to make the formal law dependent upon them. After the age of the Antonines (from 180 A. D.), such a political confusion took place, that the scientific spirit was lost. The judicial system was now continued only by the imperial constitutions, which treated but rarely of private law, while they entered much and often into the subject of public relations. The opinions of the ancient jurisconsults of the better period were regarded almost as legal authorities, and, to remedy the difficulties arising from their different views, it was provided by Valentinian III. (426 A. D.), that the majority of opinions should decide. The number of the constitutions became such, that collections of them were made, first by private persons (*codex Gregorianus et Hermogenianus*, about 365 A. D.), then an official one by Theodosius II. (*codex Theodosianus*, 438 A. D.), in sixteen books, of which the eleven last have been preserved entire; of the five first, however, only fragments are extant. The latter have been recently discovered at Turin by Peyron, and at Milan by Clossius. (See *Hermes* (a German periodical), xxv. 314.) There was also an abridgment of this code, made in 506, for the use of the Visigoths (the *breviarium Alaricianum*). Far the greater part of these decrees relates to the public law. (Jac. Godefroi wrote an excellent commentary on this code, which, together with the commentary, was published by Ritter, Leipsic, 1736.) Injurious consequences necessarily resulted from the cessation in the development of the Roman law after the time of the Antonines. It may be seen, from the expressions of Justinian, into what subtilties, what verbal and formal niceties, the lawyers had fallen in his time —a state of things, in some respects not unlike the present state of law in England, from similar reasons. The public administration, at least as far as regarded its external form, had been reduced into tolerable order since the time of Diocletian and Constantine. Theodosius II. (408—450) had conceived the idea of arranging the immense mass of rules and authorities relating to the private law, but the difficulties, on examination, were considered too great, and no sovereign till Justinian (527—565) had the courage to meet them. He first ordered the imperial constitutions, which still remained in force, to be put into a new collection (*codex Justinianus*, commenced in 527), and decided, in and after the year 530, fifty legal questions, which had been, till then, left doubtful. At the same time, a systematic abridgment of the writings of the jurisconsults was made by seventeen commissioners, embracing fifty books of *digests* or *pandects*, and an introduction to the study of jurisprudence was prepared (*institutiones*): both works were published December 30, 533, and invested with legal authority. In the following year, a new collection of imperial decrees (*codex repetitæ prælectionis*) in twelve books, was published, and from that time another series of single decrees (thirteen edicts and 159 *novellæ constitutiones*), by which the Roman law may be considered as completed, because it was deprived of its capacity of further development, and left to mankind as a rich but lifeless treasure. The opinions respecting this work of Justinian are very various. If we consider merely the practical utility of his labours, as regards his age and people, it will not be denied, that he conferred a great benefit on his subjects, and the changes themselves, which were made in the existing regulations, proceeded mostly from a sound view of the higher objects of the law. The abolition of antiquated and useless forms, the simplification of legal relations and legal processes, must be acknowledged to have been the principal objects of the changes made; and these changes were executed with judgment. If there are decrees of little value among them, these imperfections are not greater than we find in all ancient and modern codes. Justinian has been particularly blamed by modern jurisconsults for combining into one mass, into a kind of code, all the existing works on law, which were acknowledged as authorities. These critics would prefer to have the writings themselves rather than the extracts, perhaps, in some cases, perverted from their original meaning. But it is very possible, that if it had not been for the compilation of Justinian, no

part of these writings would have been preserved; and it would seem that a beneficent providence sometimes allows large masses of historical knowledge to perish (as in the case of the Alexandrian collections), in order to compel mankind to revert to the resources of their own minds, and to lead them from knowledge to wisdom. However this may be, the undertaking of Justinian was demanded by the wants of his age; and it was better to satisfy such a demand, even at the expense of some imperfections, than to delay the necessary work under the pretext of educating competent men for the task, and making thorough inquiries; and all must admit the fruit of the labour to have been a treasure of legal wisdom for posterity. Our limits will not allow us to mention here the different editions, abridgments and translations of the work prepared for the Greek provinces (the Western provinces were soon lost for ever). One Greek edition, of a much later date, was ordered by L. Basilius Macedo (867—886), and executed under his successor, Leo the Philosopher (886—912). This was called *libri Basilicorum*. Of the sixty books of which it consisted, we possess only a part; though, indeed, the greater part, published by C. Hann. Fabrot, (Paris, 1647, 7 vols. fol.,) and four books, which did not appear in this edition, were published by Reitz, in Meermann's *Thesaurus Jur.*, vol. v. p. 1.

Thus the Roman law is one original and independent whole, embracing a period of 1300 years to the time of Justinian, and of 1850 years to that of the Basilica. It stands, in this respect, unique in history. Perhaps China, if, at some future period, we learn more of its history, may afford some institution of similar duration. Even the downfall of the Roman empire has not destroyed the Roman law, but, in some respects, has enlarged its dominion. It was in force, before the modern governments were established, throughout the Roman empire in Europe, and when the Goths, Franks, Lombards, Burgundians, and other Teutonic tribes, erected new empires, not only a large part of the public law of Rome, was incorporated into the new constitutions, but the private law, also, continued to be acknowledged as valid among the old inhabitants. The new rulers took care that, besides their different ordinances for the weal of the Germanic tribes, abridgments and modifications of the Roman law should be made, sometimes, it is true, rude and barbarous enough. Among these were the *breviarum Alaricianum* of the Visigoths, 506; the *lex Romana* of the Burgundians, or *Papiani Responsa*, between 517 and 534. For the Lombards, a *rifacciamento* of the Roman law was prepared in the eighth and ninth centuries, and thus in the south of France and Italy, this law continued in authority uninterruptedly, as far as it was adapted to the new state of things. But this authority, of course, diminished in proportion as new forms of family relations and social connexions and new species and tenures of property sprang up, particularly under the feudal system, and in proportion as the internal disturbances in the different states unsettled the idea of law in general. But this idea was awakened again after the states had gained a degree of stability. People began to perceive that there was a nobler and firmer basis of right than mere power; national union gained consistency and true value by means of commerce and industry; the lower classes demanded the extension of their privileges; the increasing activity produced more solid distinctions than those of birth; the insufficiency of the old laws began to be felt, and the blessings of a scientific cultivation began to be diffused, borrowed, in a considerable degree, from the Arabians in Spain. In this state of things, men rose, in Upper Italy, in the eleventh century, who freed the law books of Justinian from the obscurity in which they had been buried till then, and by these means gave a new impulse to the science of law. Irnerius, towards the end of the eleventh and in the twelfth century, is mentioned as the first of them. All the nations on the European continent seized eagerly upon the treasure offered to them, after the model of which were now digested the papal decrees, the feudal law, and, at a later period, the Germanic laws. Thousands of scholars, from all parts of Europe, went to Bologna and other cities of Italy, to study law there. It was generally supposed, at first, that the Roman law was applicable to the whole of Christendom; but it was soon found out that there existed whole systems of laws and legal relations, with which the rules of the civil law would not harmonize; and the peculiarities in the organization of the tribunals of different countries were long an obstacle to the formal adoption of the civil law. This adoption, therefore, did not take place in the various countries at the same time, nor to the same extent. In Italy and the south of France, it was introduced first and most completely; at a later period, and to a less degree, in the north of France (in the *pays de droit coutumier*,) where it has never, in fact, been acknowledged as binding, but only as an authority in regard to general principles of natural law (*raison ecrite*), and still retains this degree of influence, notwithstanding the establishment of the *Code civil*. In England, it never has been received in the ordinary civil courts (it is, to some extent, in Scotland,) but the spiritual courts have always been guided by it. It is, therefore, in force in such cases as fall under the jurisdiction of these courts; e. g., such as relate to last wills. It is also in force in the admiralty courts, but in both with many modifications. In Germany, the idea that the emperors were the successors of the Roman sovereigns contributed much to obtain legal authority for the Roman law in that country; and this has been confirmed by several laws of the empire and of the different states composing it. But the native laws have everywhere prior authority, and the Roman law can only be applied in cases where these make no provision; but all those of its rules which relate to institutions confined to Rome have no force. It is not allowed, moreover, to be applied to cases growing out of modern institutions, such as fiefs, primogeniture, bills of exchange, nor in questions belonging to the public law. Many cases, therefore, can happen, in which there may be much doubt whether the Roman law is applicable or not. Prussia and Austria have codes; but in other German states, as in Saxony, there is a great confusion between the Roman and the native law. We have already observed that the effects of the Roman law never would cease, and its influence is perceivable in all the modern codes. We would not be understood as intimating an opinion that the Roman law supersedes the necessity of forming new codes. These are desirable in many nations, on many accounts, and, among others, because the Justinian code itself is not without obscurities, and the language in which it is written renders it inaccessible to the bulk of the people of every modern state; but the welfare of a citizen depends, in a great degree, upon correctly understanding his rights and obligations. Whether the principles of the Justinian code agree or not with those of the English law, it must be of great advantage to the common lawyer to study a digest which contains the recorded wisdom of many centuries, and furnishes abundantly both examples and warnings. We would recommend to the reader an article on civil law in the American Jurist, No. III. July, 1829 (Boston).

CIVIL LIST; an expression which formerly was customary only in England, but at present prevails also in Germany and France. As used in England, it signifies the sum which is granted to every king, at the beginning of his reign, for the support of his court and household, of ambassadors, and of the civil government in general. It was once a principle in England, as in other Teutonic nations, that the monarch was to pay all the expenses of government, even including those of the army, from the possessions of the crown, the domains (in German *Fürstenguter*), and that the subjects were not obliged to contribute anything more than they voluntarily engaged to. From this principle, which is proved by the history of the origin of the domains, it appears, that the domains, in general, cannot be considered the private property of the ruling family. On the contrary, they are, in general, the property of the state, and have been given to the prince to defray the expenses of government. The crown lands of the Saxon kings were very considerable. After the Norman conquest, they were much increased by confiscation, but were soon diminished by grants. Under Henry VIII., they were again much increased by the secularization of the convents (there existed, at that time, in England, twenty-seven mitred abbots; there were also two priories, besides numerous other convents); but the greater part of the possessions of the religious orders was squandered by this prince. William III. thought it necessary to strengthen his government by liberally rewarding his most faithful adherents, for which reason he made grants of the crown lands with such profusion that, under the government of his successor (in 1702), a law was passed, prohibiting the alienation of the royal domains. There exist, therefore, few crown lands at present, and the income from them goes into the public treasury. Formerly, there were only certain annual contributions granted to the king for the support of the government. Under Charles II., the amount of the grant was first settled (£1,200,000). Under James II., this was increased to £1,900,000. The revenue from Scotland was not comprised in this sum. After the revolution of 1688, William's love of war being known and dreaded by his people, no appropriation was made him for military expenses, and he received for defraying the expenses of the household, and the branches of the civil service immediately under the royal control, the sum of £700,000, and, at a later period, £800,000. This was called the *civil list*. Under queen Anne, the civil list amounted only to £691,000; under George I., at first, to £750,000, but was increased to £850,000. George II. had £800,000. George III. resigned all the hereditary crown taxes and revenues, appropriated to defray the expenses of the civil list, for the sum of £800,000, which, in 1777, was increased to £900,000, and at last, in 1812, to £1,028,000. Besides these grants, the debts of the civil list have been paid several times by parliament. From 1760 to 1784, they amounted to nearly £22,000,000.

In France, during the revolution, certain sums were assigned for the support of the king and his family, which civil list differed from the English in so far as all the real expenses of government were separated from it. For the king, according to the law of Nov. 8, 1814, 25,000,000 livres (£1,041,000) were set apart, and for the princes and the princesses, 8,000,000. To these grants are to be added the royal palaces in Paris (the Louvre and the Tuileries), the castles and domains at Versailles, Marly, St Cloud, Meudon, Rambouillet, Compeigne, St Germain-en-Laye, Fontainebleau, &c., with all the valuables and works of art appertaining to them: likewise the manufactories of Sevres, Gobelins, La Savonerie and Beauvais, which were declared inalienable possessions of the crown (*dotation de la couronne*). The enjoyment of these estates and manufactories belongs to the monarch, without being subject to taxes or any public burdens, and the administration of them belongs to the minister of the household. Distinct from the crown domains are the domains of the state (*domaine de l'état*), and the private possessions of the king (*domaine privé du roi*), which the king acquires like any other individual, pays taxes on, and can dispose of in his last will. If he, however, omits to do so, all his private property falls to the *domaine de l'état*. Also, all the private property which the king possessed before his accession to the throne, falls, at the moment of his accession, to the *domaine de l'état*.

In Prussia, the official statement of all the revenues and expenses to supply the ordinary wants of the state in 1821, does not mention the civil list. The expenses which fall under this head are defrayed by the domains, since a part of them, amounting to 2,500,000 Prussian dollars, has been added to the property of the crown. But the greater part of the domains, amounting to 5,600,000 Prussian dollars income annually, has been assigned to meet the public expenses. (*Bosse, Darstellung des staatswirthschaftlichen Zustandes in den Deutschen Bundesstaaten*, 1820, p. 505.)

In Bavaria, the domains have been mostly sold and added to the public treasury, which furnishes to the king and his court 2,745,000 florins annually. The same plan has been followed in Wurtemberg and Baden. In both states, the civil lists, according to the narrower sense in which this phrase is understood in France, amounts to nearly 1,200,000 florins, which, in Wurtemberg, is increased by 200,000 florins income from the court domains. If we compare these sums with the amount of the finances of the different countries, we find that in

Britain, about	one 60th part,
France,	36th,
Prussia,	21st,
Bavaria,	11th,
Wurtemberg and Baden,	one half,

of the revenue of the country is expended for the ruling house, and the proportion is still greater in the case of the smaller governments. It is worth while to compare these sums with the modest salaries of the American cabinet, and the revenue of the Union. In some small governments, the principle of despotism has gone so far as to assign to the court and the ruling family the income of all the domains, and to throw the whole public debt on the country.

CIVILIZATION is one of those comprehensive words which are most used and least understood. Most people take their own time, and, very often, their own country, as the standard whereby they judge the civilization of other ages and other countries. Whether our age has reached a higher point of civilization than any preceding one, is, of course a matter of very great doubt, but there is no doubt that it makes louder claims to superiority in this respect than any previous period. Such pretensions are generally the consequence of ignorance of other times and their productions. It is certainly a circumstance worthy of some consideration, that persons whose talents and acquirements have enabled them to take wide and penetrating views of the past and present, have shown the least disposition to echo the cry of the march of intellect. The different opinions respecting civilization may be comprised under a few heads:—1. Some people believe in the possibility of constant advancement, and the ultimate attainment of perfect civilization, a consequence of which will be perfect happiness. 2. Others believe that every

nation, which arrives at a marked intellectual development, goes through certain stages of civilization, and, after reaching the highest point which it is capable of attaining, declines; that, moreover, the march of improvement in different nations shows itself in different ways, e. g., by the progress of the fine arts and philosophy among the Greeks, by the advancement of the natural sciences and the construction of great works of architecture among the Egyptians, by the development of the law among the Romans, &c. 3. Some believe in a general progress of the intellect to a certain point, after which an equally general decline commences, thus making the race subject to the same laws as the individual. 4. Some persons cannot discover any regularity in the march of civilization.—However these different opinions may appear, when measured by metaphysical theories, the second seems to be most conformable to history, with this qualification, however, that the increasing communication between nations has subjected many to similar influences, so that the opinion is applicable, at present, rather to families of nations than to single ones. Another subject, on which much difference of opinion exists, is, respecting the place where civilization originated. It is usually said, in Asia: some inquirers, however, make Ethiopia its first seat, in support of which opinion, various passages are cited from the Greek writers. Little doubt seems to exist, that the Greeks received their civilization from Egypt, Mr Alexander Everett, in his work on America, goes so far as to maintain that it appears, from the historical sources we possess, that civilization commenced with the blacks; that "the blameless Ethiopians" of Homer were considered, by the Greeks, as superior beings to themselves; and that the Egyptians, before they became mingled with white races, were people of colour, or negroes—an opinion which the learned gentleman has recently advanced again in a public lecture. A further and highly important question respecting civilization, is, How far was it aided or produced by Christianity? Some persons contend that all the civilization which we enjoy is owing to Christianity, even our progress in science, &c. Others assert the contrary, and say, that history shows that Christianity has hardly ever taken the lead in promoting civilization, which, in every stage of its progress since the birth of Christ, has been urged on by other causes, as the revival of learning, promoted by the conquest of Constantinople, the propagation of democratic notions by the disbelieving philosophers of France, &c., and that Christianity rather accommodated itself to the effects produced by these causes. A third class believe that Christianity had a great influence on civilization in former ages, but that its influence in this respect has become less, as that of science has become stronger. See *Perfectibility*.

CIVITA, in geography, the Latin *civitas*, truncated in the Italian way, appears in many names of cities, as *Civita Lavinia*.

CIVITA VECCHIA (anciently *Centum Cellæ*); a seaport of the popedom, in the patrimony of St Peter, 27 miles N. W. Rome; lon. 11° 45′ E.; lat. 42° 5′ N.; population, 7,111. The port was enlarged and rendered commodious by Trajan. It is one of the best in the papal dominion, and next to Ancona in commercial importance. Here are about 6000 galley-slaves. It is the capital of the delegation Civita Vecchia.

CLACKMANNANSHIRE, a county of Scotland, bounded on the south and south-west by the river Forth, which separates it from Stirlingshire, on the south-east by Fifeshire, and at every other point by Perthshire. It is the smallest county of Scotland, being only about eight miles long and six and a half broad. Adjacent to the Forth, the surface of the county is plain and fertile, yielding an abundance of corn, agriculture having been here brought to high perfection. Towards the north-east, the ground gradually rises into the Ochil hills, which, besides affording excellent pasture for sheep, produce plenty of coal, freestone, iron-stone and granite, and in some parts silver, lead, copper, and iron-ores, with cobalt, antimony, agates, pebbles, and a few specimens of the topaz. The coast is indented with numerous creeks, the resort of fishermen, including several secure harbours, the principal of which are Alloa, and its subordinate port Clackmannan. The public works of the county consist chiefly of breweries and distilleries. The town of Clackmannan is nominally the capital of the county, although Alloa (q. v.) is so virtually. Population of the town in 1831, 4266; of the county, 14,729.

CLAIRON, Claire-Josephe-Hippolyte-Legris de la Tude; a celebrated French actress. She evinced, when very young, a predilection for the stage, and, adopting the profession, soon became the first tragic performer of her age and country. Garrick, when he visited Paris, became acquainted with her, and afterwards testified the highest admiration of her talents. She long remained without a rival, and, having retired from the stage, died at an advanced age, in 1803. She published *Memoires et Reflexions sur la Declamation Theatrale*.

CLAN (*Gaelic*, a tribe or family), among the Highlanders of Scotland, consisted of the common descendants of the same progenitor, under the patriarchal control of a chief, who represented the common ancestor. The name of the clan was formed of that of the original progenitor with the affix *mac* (son): thus the MacDonalds were the sons of Donald, and every individual of this name was considered a descendant of the founder of the clan, and a brother of every one of its members. The chief exercised his authority by right of primogeniture, as the father of his clan: the clansmen revered and served the chief with the blind devotion of children. The appellation of the chiefs had, generally, a reference to the history of their ancestors, and denoted little more than that they were the descendants of the first father of the clan; thus the chief of the Macdonnells was *Mac Allister More* (the son of the great Allister). They were distinguished from the rest of the clan by a feather in their bonnets. Each clan was divided into two orders, the *tenants* or *tacksmen*, the near relations of the chief, to whom portions of land were assigned, during pleasure or on short leases, and whose descendants were generally merged in the second class, or *commoners*, by the resumption of the land. The tacksman usually had a subdivision of the clan under him, of which he was chieftain, subject, however, to the general head of the sept. The jurisdiction of the chiefs was not very accurately defined, but, as is generally the case in such a state of society, it was necessary to consult, in some measure, the opinions of the most influential clansmen, and the general wishes of the whole body. The rebellions of 1715 and 1745 induced the English government to break up the connexion which subsisted between the chiefs and the clansmen. The hereditary jurisdiction of the chiefs was, therefore, abolished, the people disarmed, and even compelled to relinquish their national dress; and but few traces of this institution now remain. (See Mrs Grant's *Superstitions of the Highlanders*.)

CLAP, Thomas, president of Yale college, was born at Scituate, Massachusetts, June 26, 1703. He was graduated at Harvard college, in 1722, and afterwards commenced the study of divinity. For his acquisitions in this and in various other branches of knowledge, particularly mathematics, astronomy, natural and moral philosophy, history, the civil and

canon law, he was much distinguished, and possessed, also, a competent knowledge of Greek, Latin, and Hebrew. He prosecuted his ecclesiastical labours at Windham, Connecticut, from 1726 to 1739, when he succeeded the reverend Elisha Williams in the presidency of Yale college. He was an impressive and powerful preacher, and a man of exemplary piety and singular industry. His religious sentiments were in accordance with the Calvinism of the Westminster assembly. He constructed the first orrery or planetarium made in America, and published a History of Yale College, a Brief History and Vindication of the Doctrines received and established in the Churches of New England, two Sermons, and Conjectures upon the Nature and Motion of Meteors which are above the Atmosphere. He had prepared also materials for a history of Connecticut, but his manuscripts were carried off in the expedition against New Haven under general Tryon. He died on the 7th of January, 1767, in the 64th year of his age, having resigned his station as president the year previous.

CLAPPERTON, captain Hugh, the African traveller, was born in Annan, Dumfries-shire, in 1788. After some elementary instruction in practical mathematics, he was bound apprentice at the age of thirteen, to the owner of a vessel trading between Liverpool and North America, in which he made several voyages. He was then impressed into the king's service, was soon after made a midshipman, served on the American lakes in the year 1815, and, in 1816, received the commission of lieutenant. Having retired to Scotland, he became acquainted with doctor Oudney, who was about to embark for Africa, and requested permission to accompany him. Lieutenant (since colonel) Denham having volunteered his services, and it being intended that researches should be made, to the east and west, from Bornou, where doctor Oudney was to reside as British consul, his name was added to the expedition by lord Bathurst. In the Recent Discoveries in Africa, made in 1823 and 1824, by Major Denham, Captain Clapperton and Doctor Oudney (London, 1826), we have accounts of an excursion from Mourzouk to Ghraat, a town of the Tuarics, by doctor Oudney; of a journey across the desert to Bornou, of various expeditions to the southward and eastward, by major Denham; and of an excursion through Soudan to the capital of the Fellatahs, by captain Clapperton. The expedition set out from Mourzouk, Nov. 29, 1822, and arrived at lake Tchad, in the kingdom of Bornou, Feb. 4, after a journey of 800 miles. Six days after they entered the capital, Kouka, Clapperton, in company with doctor Oudney, who died on the way, set out on an expedition to Soccatoo, the capital of Houssa, more than 700 miles east of Kouka, which he reached in ninety days. He was not permitted to pursue his journey to the west, and returned to Kouka, and thence to England in 1825. The information which the travellers collected, in regard to the habits and commerce of the people of Central Africa, was important, as showing the existence in that quarter of a large population of a peaceable disposition, and possessed of a considerable civilization. The geographical information collected was not without its value, although it left undecided the disputed questions of the course and termination of the Niger. They proceeded south from Tripoli (lat. 32° 30') to Musfeia (lat. 9° 10'), being 1400 miles in difference of latitude, and from Zangalia, on the east of lake Tchad (lon. 17° E.), to Soccatoo (lon. 6° E.), making a difference of longitude of 660 miles. They thus determined the position of the kingdoms of Mandara, Bornou and Houssa, their extent, and the position of their principal cities. On his return to England, lieutenant Clapperton received the rank of captain, and was immediately engaged, by lord Bathurst, for a second expedition, to start from the Bight of Benin. Leaving Badagry, Dec. 7, 1825, he pursued a north-easterly direction, with the intention of reaching Soccatoo and Bornou. Two of his companions captain Pearce and doctor Morrison, perished a short time after leaving the coast, and Clapperton pursued his way, accompanied by his faithful servant Lander. At Katunga, he was within thirty miles of the Quorra or Niger, but was not permitted to visit it. Continuing his journey north, he reached Kano, and then proceeded westward to Soccatoo, the residence of his old friend Bello. Bello refused to allow him to proceed to Bornou, and detained him a long time in his capital. This conduct appears to have arisen from the war then existing between Bello and the sheik of Bornou, and to the intrigues of the pacha of Tripoli, who had insinuated that the British meditated the conquest of Africa, as they had already conquered India. This disappointment preyed upon Clapperton's mind, and he died, April 13, 1827, at Chungary, a village four miles from Soccatoo, of a dysentery. (See *Journal of a second Expedition from Kano to the sea-coast, partly by a more eastern Route*, London, 1829; Philadelphia, 1829; *to which is added the Journal of Richard Lander* the servant of Clapperton.) Clapperton was the first European who traversed the whole of Central Africa, from the Bight of Benin to the Mediterranean. We have thus a continuous line from Tripoli to Badagry, which is of great importance from the assistance which it will afford to future researches. Clapperton was a man without education, but intelligent and impartial; of a robust frame and a happy temperament. He was capable of enduring great hardships. His knowledge of the habits and prejudices of the Central Africans, his frank, bold, and cheerful manners, would have rendered him peculiarly useful in promoting the designs of the British government in that quarter.

CLARE, the most northern of the six counties into which the province of Munster, Ireland, is divided, is bounded on a part of the north by Galway Bay, on the west by the Atlantic Ocean, on the south and east by the river Shannon, and on the north-east by Galway county. The surface generally consists of mountain and bog; the Sliebhboghta hills, the district of Doolan, and all the southern part of the county adjoining the Shannon is a bog resting on sandstone rock, and might be improved by lime, the carriage of which would be easy by the Shannon navigation. The Burrin Mountains, which occupy the north-west, rest on limestone, and turf is procured by the inhabitants from the opposite shores of Connemara. The junction of the schistose and limestone districts constitutes a broad belt of rich ground, as is the case at Riverstone, Shally, Applevale, Lememagh, &c., but the most fertile and celebrated lands in Clare are those districts on the banks of the Shannon and the Fergus rivers, called in this country *corcasses*. The corcasses are of various breadths, and indent the land in a great variety of shapes. The principal rivers are the Shannon, the Fergus, the Ougarnee, the Ardsalles, Clareen, Boagh, and Inistymon. Like most mountainous counties, Clare has numerous lakes, Lough Terriog, situated upon the summit of Sliebhboghta; Lough Grany, or the Lake of the Sun, and Loughs Tedane, Inchiquin, and O'Grady are among the most extensive. Agriculture is the only occupation of the inhabitants; and the feeding of sheep upon the extensive mountain pastures is a source of much wealth. Coals have been found, but in beds of insufficient thickness, and at great depths; good flags, slates of a superior quality, limestone, ironstone,

manganese, and lead and copper ores in various places; but none of these minerals have yet been worked to any great advantage. Clare returns three members to parliament, two for the county, and one for the borough of Ennis. Population in 1831, 258,262.

CLARENDON; a village three miles east of Salisbury, where Henry II. summoned a council of the barons and prelates, in 1164, who enacted the laws called the *constitutions of Clarendon*, by which the power of the pope in England was checked.

CLARENDON. Edward Hyde, earl of Clarendon, lord high chancellor of England, was born probably at Dinton, in Wiltshire, 1608, was educated at Oxford, and afterwards studied law under his uncle Nicholas Hyde, chief justice of the king's bench. He was a member of the long parliament under Charles I.; and the purity of his intentions, his attachment to the laws of his country, and the talents which he displayed, gained him the confidence of that body. Upon the breaking out of the civil war, he attached himself to the king's party; became chancellor of the exchequer and member of the privy council, and followed prince Charles (afterwards Charles II.) to Jersey. Here he remained for two years, while the prince was in France, and during that time began his History of the Rebellion. He likewise composed at Jersey the various writings which appeared in the king's name, as answers to the manifestoes of the parliament. After Charles I. was beheaded, the new king called him to France, and sent him to Madrid, to see if any assistance could be obtained from the Spanish court. From thence he went to Paris to reconcile the queen mother with the duke of York, and afterwards to the Hague, where Charles II. appointed him lord chancellor of England, in 1657. After Cromwell's death, Edward Hyde contributed more than any other man to the happy termination of the measures which placed Charles II. on the throne. He subsequently possessed the entire confidence of the king, who loaded him with favours. In 1660, he was elected chancellor of the university of Oxford; in 1661, he was made peer and baron Hyde, viscount Cornbury, and earl of Clarendon. Many events occurred to disquiet him in the licentious court of Charles II.; among these was the marriage of the duke of York, the king's brother, to his daughter. The duke, while at Breda, the residence of his sister, the princess of Orange, became acquainted with Anne Hyde, Clarendon's eldest daughter, maid of honour to the princess, and married her, November, 1659, without the knowledge of the king or the chancellor. Anne's pregnancy occasioned the disclosure of this union after Charles's restoration. As soon as the king had ascertained the validity of the marriage, he acknowledged Anne Hyde as duchess of York, commanded his brother to continue to love her, and, at the same time, declared that this event had not changed his sentiments towards the chancellor. Two daughters, Anne and Mary, were the fruit of this marriage, both of whom ascended the British throne. In 1663, lord Bristol made an attack upon the chancellor in the parliament. This body, however, disregarded his accusations. Attempts were also made to injure him in public opinion, while, on the other hand, his influence with the king was declining, as Charles had now less regard for an able minister than for the instruments of his prodigality. The duke of Buckingham, moreover, was continually labouring to make the chancellor ridiculous in the eyes of the king, and his station as prime minister made the nation regard him as answerable for all the faults of the administration. The ill success of the war against Holland, the sale of Dunkirk, and other events, excited public indignation. The king's displeasure was changed into hatred, when he saw his plan of repudiating his wife, and marrying the beautiful lady Stuart, defeated by Clarendon, who effected a marriage between this lady and the duke of Richmond. The king deprived him of his offices, and an impeachment for high treason was commenced against him. Clarendon fled, and sent his apology from Calais to the house of lords. Both houses ordered this writing to be burned by the common hangman, and Clarendon was banished forever. The hatred of the nation pursued him even to the continent. At Evreux, he was attacked by some British sailors, dangerously wounded, and with difficulty rescued from their hands. He lived six years at Montpellier, Moulins, and Rouen, at which latter place he died December, 1674. His remains were afterwards carried to England, and buried in Westminster abbey.—Lord Clarendon, as long as he was minister, was the friend and supporter of the king against the factious, and the defender of his country's freedom against the abuse of the royal power. Ingratitude and prejudice the more easily ruined him, as his stern and proud character prevented his gaining affection. Among his many writings, the most important is the History of the Rebellion, from 1641 down to the Restoration of Charles II. It is a very able work, although not free from prejudices. To this was added, in 1759, his Life and a Continuation of his History.

CLARET. See *Bordelais Wines*.

CLARICHORD, or CLAVICHORD. A keyed instrument, now out of use, somewhat in the form of a spinet, and the strings of which are supported by five bridges. One distinction in the clarichord is, that the strings are covered with pieces of cloth, which render the sound sweeter, and, at the same time, deaden it, so as to prevent its being heard at any considerable distance. On this account, it was formerly much used by the nuns, who could practise on it without disturbing the dormitory. It is sometimes called the *dumb spinet*.

CLARIFICATION, or the separation of the insoluble particles that prevent a liquid from being transparent, may be performed by *depuration, filtration*, or *coagulation* In the first of these operations, the liquid is permitted to subside, without being in the least disturbed, until all the particles which were in suspension are precipitated; it is then decanted. This mode of clarification can only be used when the substance on which we operate is in a large quantity, or is of a nature not to be altered during the time necessary to complete this operation, and finally when its specific gravity is less than that of the particles which render it turbid. Filtration is a process by which a liquid is strained through a body, the interstices of which are small enough to stop the solid particles contained in it. Filters of wool, linen, paper, powdered glass, sand, or charcoal, may be used, according as the liquid is more or less dense, or of a nature to operate upon any one of these bodies. Finally, clarification by coagulation is performed with the assistance of albumen contained in the liquid, or added to it for this purpose, which, by the action of caloric, of acids, &c., becomes solid, forms a mass, and precipitates the extraneous substances. The white of eggs is generally used for this purpose.

CLARINET. A wind instrument of the reed kind, the scale of which, though it includes every semitone within its extremes, is virtually defective. Its lowest note is E below the F clef, from which it is capable in the hands of good performers, of ascending more than three octaves. Its powers, through this compass, are not everywhere equal; the player, therefore, has not a free choice in his keys, being generally confined to those of C and F, which, indeed, are the only keys in which the clarinet is heard to

advantage. The music for this instrument is therefore usually written in those keys. There are however, B flat clarinets, A clarinets, D clarinets, B clarinets, and G clarinets: the three latter are scarcely ever used in Britain.

CLARK, John; an industrious critic and classical commentator, who published many useful works on education. He was the master of a grammar school at Hull, in Yorkshire, where he died in May, 1734. Among his publications are an introduction to making Latin, and editions of several Latin authors, with English translations.

CLARKE, Adam, L L. D., an eminent Methodist preacher and scholar, was born in 1763, in the county of Londonderry, Ireland, his father being of an English family, and his mother a Scots woman. He became an itinerant Methodist preacher in 1782, and continued to travel in various circuits till 1805, when he took up his residence in London, where he passed a considerable part of his subsequent life. He died of the cholera at Bayswater, August 26, 1832. He was learned in the oriental languages, and published a commentary on the scriptures, and various other works, among the rest a Bibliographical Dictionary in eight or nine 12mo volumes.

CLARKE, Edward Daniel, L L. D.; a celebrated traveller of our own times; professor of mineralogy at Cambridge, which university he enriched with the fruits of his researches in foreign countries. He was the second son of the reverend Edward Clarke, author of Letters on the Spanish Nation, and various minor works, and was born in 1767. He received his education at Jesus college, Cambridge, of which society he became a fellow, having taken the degree of A. M. in 1794. Soon after he accompanied Lord Berwick to Italy, and, in 1799, set out with Mr Cripps, on an extensive and laborious tour through Denmark, Sweden, Lapland, Finland, Russia, Tartary, Circassia, Asia Minor, Syria, Palestine, Egypt, Greece, and Turkey, returning, in 1802, through Germany and France. On his return, he obtained, from the University to which he belonged, the honorary degree of L L. D., as a distinguished mark of its approbation, and in consideration of the services rendered to its public libraries and institutions by his liberal contributions, among which the greatest, perhaps, in value, is the celebrated manuscript of Plato's works, with nearly 100 others, and a colossal statue of the Eleusinian Ceres. To him also the British nation is indebted for the acquisition of the famous sarcophagus of Alexander the Great, which he discovered in the possession of the French troops in Egypt, and was the means of its being surrendered to the British army. In 1806, he commenced a course of lectures on mineralogy, having brought a splendid collection of specimens to Europe; and, in 1808, a professorship being founded purposely for the encouragement of that branch of knowledge, he was elevated to the chair. A rare collection of plants and medals proved, also, at once the correctness of his taste and the extent of his industry; while a curious model of mount Vesuvius, constructed by him, with the assistance of an Italian artist, from the materials of the mountain it represents, attests his great ingenuity. This piece of art is now in the possession of Lord Berwick. Dr Clarke published the Testimony of different authors respecting the colossal Statue of Ceres placed in the Vestibule of the Public Library at Cambridge, with an account of its removal from Eleusis (8vo., 1801—1803); The Tomb of Alexander, a Dissertation on the Sarcophagus brought from Alexandria, and now in the British Museum (4to., 1805); A Description of the Greek Marbles brought from the Shores of the Euxine, Archipelago and Mediterranean, and deposited in the Vestibule of the University Library, Cambridge (8vo. 1809); Travels in various countries of Europe Asia and Africa, Part I containing Russia Tartary and Turkey (4to., 1810); Part II. containing Greece, Egypt and the Holy Land (Section 1st, 4to, 1812; Section 2d, 1814); and some other works. Doctor Clarke died March 9, 1821. After his death, a volume was published, containing his Travels through Denmark, Sweden, Lapland, Norway, Finland, and Russia (London, 1823, 4to). A complete edition of his works appeared, in 11 volumes, in 4to. and 8vo. (London, 1819—24, under the title of Travels in various countries of Europe, Asia, and Africa.

CLARKE, Samuel, D. D., a celebrated theological and philosophical writer, was born at Norwich, in the year 1675, of which city his father was an alderman. He was educated at Caius college, Cambridge. Whilst at the university he diligently cultivated a knowledge of the Scriptures, in the original languages, and, before the age of twenty-one, largely contributed to diffuse the Newtonian system. Being of opinion that the vehicle of an established work, like that of Rohault, would be most convenient for the gradual introduction of true philosophy, he translated that author's Physics for the use of young students, whom he thereby familiarized with the language and reasonings of Newton. On entering into orders, he became chaplain to Moore, bishop of Norwich, and first became an author in his own profession in 1699, when he published Three practical Essays upon Baptism, Confirmation and Repentance. This work was followed by Reflections on a book called Amyntor, by Toland, relating to the authenticity of writings not received into the canon of Scripture. In 1701, he published his Paraphrase on the Four Gospels, and, about the same time, received two small livings in and near Norwich. In 1704, he was appointed to preach the sermon at Boyle's lecture, when he chose for his subject the Being and Attributes of God, and gave so much satisfaction that he was appointed to the same office the next year, when he delivered a course of sermons on the Evidences of Natural and Revealed Religion. These sermons exceedingly raised the author's reputation as a close and acute reasoner, although his argument *a priori*, for the existence of a God, was by Pope and others, deemed too subtle and metaphysical. He, however, employed it only in opposition to Hobbes, Spinoza, and similar reasoners, who could be no other way opposed. In 1706, he published a Letter to Mr Dodwell, on the Immortality of the Soul, and during the same year, gave an elegant Latin version of Sir Isaac Newton's Optics, for which that great man presented him with £500. His friend, bishop Moore, now introduced him to queen Anne, who appointed him her chaplain, and presented him with the rectory of St James's, Westminster, the highest preferment he ever obtained. On this occasion he took his degree as D. D. In 1712, he appeared as a philologist, by editing a fine edition of Cæsar's Commentaries, which he dedicated to the great duke of Marlborough, and, in the same year, published a work which involved him in endless controversy, entitled The Scripture Doctrine of the Trinity. In this production, that mysterious tenet is, on critical principles, examined as deducible from the words of scripture; and the result of the author's reasonings was so different from the opinions of the Church of England that it became a subject of complaint in the lower house of convocation. Several controversial pieces were written on this occasion, the chief champion of orthodoxy being doctor Waterland. In 1715 and 1716, a disputation was carried on between doctor Clarke and the celebrated Leibnitz, concerning the principles of natural philo-

sophy and religion, the papers of which were collected and addressed to the princess of Wales, afterwards queen Caroline. In 1717, he published Remarks upon Collins's Inquiry concerning Human Liberty and, soon after, gave much offence by altering the doxology of the singing psalms at St James's; on which occasion the bishop of London sent a circular to the clergy forbidding the use of them. In 1724, he published a volume consisting of seventeen sermons, and, on the death of Sir Isaac Newton, in 1727, was offered the place of master of the mint. This office he declined accepting, as inconsistent with his profession, preferment in which had, however, now become hopeless. In 1728, he wrote a letter to Mr Hoadley, On the Proportion of Velocity and Force in Bodies in Motion, and, the next year, published the first twelve books of Homer's Iliad, with a Latin version, the remaining books of which were published by his son in 1732. Doctor Clarke's reputation as a classical scholar is chiefly founded on this performance, which is held in high esteem. He had all his life enjoyed sound health; but, on Sunday, May 11, 1729, when going to preach before the judges at Serjeants' Inn, he was seized with a pleuritic complaint, which carried him off, after a few days' illness, in his fifty-fourth year. He left in manuscript, prepared for the press, An Exposition of the Catechism, which was published by his brother, with ten posthumous volumes of sermons. The private character of doctor Clarke was extremely amiable, being upright, mild, and unaffected. His intellectual eminence was founded on a strong cultivation of the reasoning faculty, without passion or enthusiasm. He closely pursued his object, with methodical accuracy and logical acuteness, aided by a strongly retentive memory and indefatigable attention.

CLASSIC (from the Latin *classis*). The Roman people were divided into six *classes*, and *classici* was the name given to the citizens belonging to the first class. From this circumstance, the Greek and Roman authors have been, in modern times, called *classics*, that is, the excellent, the models. There is, of course, a great diversity of value among them; but their superiority to the writers of modern Europe, at the time of the revival of letters, was so great, that it was very natural for their admirers to give them, collectively, the name of *classics*. The Germans soon gave the word *klassich* (classical) a wider sense applying it more philosophically, and making it embrace, 1. the standard works of any nation, and, 2, ancient literature and art, in contradistinction to the modern or romantic. The British and French have followed this example, though but recently. *Dictionnaire de l'Academie* gives no other definition to the word *classique* than *Auteur classique, c'est-a-dire un auteur ancien, approuve, et qui fait autorite dans une certaine matiere: Platon. Homere, Demosthene Cicerone, Virgile, Tite Live, &c. sont des auteur classiques.*

As regards classical, by which we mean, in this place, ancient, literature, we observe a striking difference between it and modern literature. The Greek authors were the pupils of nature and an active energetic life. These furnished their discipline rather than the pedantic forms of schools, which are impressed with painful labour upon the memory, and only half understood. They had, besides, a very keen sensibility for beauty, which was fully developed by the loveliness of surrounding nature, and by their active life in which all their faculties were unfolded. They spent their lives in constant contests for liberty and superiority in physical or mental accomplishments. Everything was public; everything stimulated emulation. Nature and liberty are the genii which presided over the labours of the Greeks; and their works are classical, that is, models, as far as they are the natural fruit of the circumstances in which they were placed. The successes of the Greeks over the slaves of Asia, and the overthrow of their own tyrants, first produced poets among them; and these continued, in an uninterrupted series, exerting a decisive influence upon rhetoric, history, and the plastic arts, and receiving, in their turn, a corresponding influence, until degeneracy, over-refinement and political subjugation took the place of nature and liberty. The Macedonian and Roman dominion fixed the limits of Greek classical literature. From that time, Greece produced only learned inquirers and rich treasures of knowledge, but no works distinguished as models, such as had been composed in the time of her freedom, under the joint influence of her political constitution, religion, beautiful climate, and language, which contained the elements of the highest perfection in a far greater degree than most other languages.—The Romans, from their political constitution and national character, have become models only in history and rhetoric, and works on war, architecture, and law. The most active element in their national character was always the military and legal spirit. But their language acquired, from the habits of the nation, such conciseness and precision, that they remain models in history, and, in fact, in every branch of composition, as far as concise expression is concerned, so difficult and so valuable an attainment. The rapid growth of their power outstripped the development of their literature, which attained its meridian soon after the overthrow of liberty and the establishment of despotism. Hence it speedily degenerated, and the time soon arrived when Roman literature consisted, in a great measure, of descriptions of the universal corruption and misery of the people, characterized either by a morose bitterness or by the complacency of deep-seated immorality.—The style of the ancient writers is very characteristic, and forms a striking distinction between them and the moderns. Their language is generally simple, natural, pure, and therefore expressive; whilst the modern writers, by reason of their greater erudition, and the refinements of our social life, are constantly tempted to sacrifice energy and conciseness to brilliancy and richness of illustration; so much so, that Rousseau was led into the paradox of declaring himself an enemy to all wit. Besides the style of the ancient writers, so many circumstances contributed to the excellence of their productions; the union of knowledge and ignorance, of rudeness and refinement, was fitted to exercise so beneficial an influence upon them, but the best works of the Greeks and Romans have secured to themselves a permanent place among the means of intellectual cultivation, throughout Europe and the nations of European descent. It has often been said, that the knowledge of the languages and literature of Greece and Rome can be of little value to us, as their condition and character, their principles, political and religious, were so different from ours. But, without mentioning the advantages to be derived from a knowledge of these languages by men devoted to certain particular pursuits, we do not hesitate to affirm, that the highest degree of intellectual accomplishment is not possible without classical attainments. We ought to be thankful that we are permitted to avail ourselves of the literary treasures of these glorious nations, without being obliged to participate in the sufferings and struggles which contributed so essentially to their richness and beauty. The very study of their languages has a most salutary influence on the intellectual development of the students of modern times, whose native languages are of a much less philosophical construction. If it

were necessary to bring forward examples, it would be easy to show, not only that most of the men of modern times, distinguished in the various branches of moral and political science, have had a classical education, but also that this education has exerted a most important influence on their minds. The beneficial effect of classical literature on the character of nations might also be easily shown. Undoubtedly a wrongly directed classical education has, in some instances, produced injurious consequences. So, too, has misdirected religious instruction; but the one is no more an argument against classical literature than the other is against religion.—We shall not, in this place, enter upon a statement of the characteristic differences of ancient and modern literature, as the subject has not been sufficiently discussed by English writers to give that precision to the requisite phraseology which would be necessary to make a condensed view of the subject intelligible. We will only remark, that the religion of the Greeks—to use the words of the celebrated Augustus William Schlegel—was the apotheosis of the powers of nature and of terrestrial life. Everything, therefore, was positive, clear, and finished in their religion and religious views. Such is also the predominating character of their literature. Modern literature, on the other hand, is marked with the character of the Christian religion, which directs the mind to the mysterious and the infinite. The Greek philosophy, moreover, sought for happiness in mental tranquillity and the well-balanced and harmonious action of the different faculties. The Christian encourages a struggle between the higher and lower powers of our nature. The influence of the Christian principle on the modern writers is not, indeed, universal. Some productions of modern times are characterized by the Grecian element rather than the romantic, or, as it might properly be called, the *Teutonico-Christian*, for instance. some of the poems of Goethe. This cannot be said of Byron, notwithstanding the anti-Christian character of much which he has written. We will conclude our remarks respecting the difference between ancient and modern writers by another remark of Schlegel. He says that the genius of the ancient poets was of a plastic character; that their creations resembled those of the sculptor. Sculpture directs our attention exclusively to a particular object: it detaches the statue from all surrounding objects, or indicates them, if at all, very slightly. This is the character of the creations of the ancient dramatists, whilst the genius of the modern drama has much more resemblance to that which fills a picture with a great variety of objects, operating, it is true, to produce a common effect, but having also much individuality of character.

The same difference which exists between ancient and modern or classical and romantic literature, prevails, to a great degree, between ancient and modern art. We may remark in general, respecting classical art, by which we mean especially Greek art (the Romans having always remained, in a great measure, imitators of the Greeks), that its productions are complete in themselves, expressing, in their beautiful forms, all which the artist intended to convey, while the genius of modern art is characterized by aiming at something infinite, beyond the power of precise conception and perfect representation. For this reason, the Greeks devoted themselves to sculpture more than to painting, and even gave to their productions in the latter branch of art something of a plastic character, whilst the moderns have directed their attention much more to painting, and have given to sculpture a character different from that which it had among the ancients. • The same difference of feeling is apparent in the architecture of the two periods, and the music of modern times owes its excellence to causes similar to those which have carried painting to such perfection.

As regards the classical writers of any country, meaning, by this term, the standard writers in the different departments of literature, it would be difficult to give a precise definition of what entitles an author to the epithet *classical*; yet we find the judgment of nations (allowance being made for the peculiar tastes of each) pretty uniform and pretty correct. Still, however, there are considerable diversities of opinion as to the writers who are to be ranked as classics, in nations among whom the overwhelming authority of some great learned body has not determined who are entitled to this designation. We might instance the Germans, and even the French, as far as respects the writers who have appeared since the publication of the *Dictionnaire de l'Académie.*—Much information is contained on the French classics in La Harpe's *Cours de Littérature Francaise*, and in that of Levizac (Paris, 1807, 4 vols.); also in Bouterwek's extensive *Geschichte der Poesie and Beredtsamkeit*. For the English classics, Johnson and Warton are to be consulted. Bouterwek's work also, is full of valuable information on this subject. The Italian classics are to be learned from the works of Tiraboschi, Ginguené, Sismondi and Bouterwek. An account of the best authors of Spanish literature is to be found in Velasquez and Nicolas Antonio, *Bibliotheca Vetus et Nova*, in Sismondi's *Litérature du Midi de l'Europe*, and in Bouterwek's work, of which the part relating to Spain has been lately translated into Spanish, under the following title: *Historia de la Literatura Espanola, escrita en Aleman por F. Bouterwek, traducida al Castellano y adicionada por D. José Gomez de la Cortina y D. Nicolás Hugalde y Mollinedo* (Madrid, 1829, 8vo. vol. i, pp. 276). Half of vol. i. consists of additions by the translators, which, however, do not add much to the value of the work. For Portuguese literature, Bouterwek, Sismondi, and, chiefly, don Barbosa Machado's *Bibliotheca Lusitana* (Lisbon, 1731, 4 vols. fol.), are to be recommended. The works of Ideler and Nolte, *Handbucher*, for French, Italian, Spanish and English literature, are highly valuable, containing judicious selections from the best prose writers and poets in these literatures, with short accounts of each author from whom extracts are made. These gentlemen are distinguished literati at Berlin, of whom the former is likewise known as one of the greatest chronologists of the age, and by his Arabian Chrestomathy. For German literature, Ersch's *Handbuch der Deutschen Literatur* (new edition, 1822 et seq., 4 vols.) is to be consulted. For further information respecting the literature of different countries, see the articles on these countries respectively. Augustus William Schlegel's works must be considered as still unrivalled for profound and original criticism on the art and literature of the ancient and modern nations.

CLAUDE LORRAINE, so called, was one of the most distinguished landscape painters. His real name was *Claude Gellée*: he was called *Lorraine* from the province of his name, where he was born in the castle of *Champagne*, of poor parents, whom he lost early. His education was much neglected. When 12 years old, he went to live with his brother, an engraver in wood at Friburg. Afterwards, a relation of his took him to Rome, where he was employed by the landscape painter Agostino Tassi, as a colour-grinder and a kitchen boy. Here he received a little instruction in painting, having previously acquired some skill in drawing from his brother. The sight of some paintings of Godfrey Vals enchanted him so much, that, in spite of his poverty, he tra-

velled to Naples to study with the artist. His genius now unfolded itself with such rapidity, that he was soon considered one of the first landscape painters of his time; particularly after he had studied, in Lombardy, the paintings of Giorgione and Titian, whereby his colouring and *chiaro scuro* were greatly improved. After making a journey into his native country, he settled, in 1627, in Rome, where his works were greatly sought for, so that he was enabled to live much at his ease, until 1682, when he died of the gout. The principal galleries of Italy, France, England, Spain, and Germany are adorned with his productions. His best work, and the one on which he himself set the greatest value, is the painting of a small wood belonging to the villa Madama (in Rome). Clement XI. offered to purchase it for as many pieces of gold as would cover its surface; but the artist would not part with it, since he used it as a study. Claude possessed the greatest power of invention, by which he gave an inexhaustible variety to his paintings, united with an ardent and persevering study of nature. The truth with which he portrays the effect of the sun in every part of the day, soft breezes playing through the tops of the trees, and all the delicate beauties of nature, is surprising; and no artist but Caspar Dughet comes near him in this particular. But all his rivals fell far short of equalling the dewy humidity which he threw over dark, shadowy places. His figures are poor, and he used to say—"I sell my landscapes, and give my figures into the bargain." In a great part of his paintings, the figures are the work of Lauri and Francesco Allegrini. Claude most frequently chooses agreeable views without fixing limits, in which the eye loses itself. He often introduces grand architectural structures, and makes his landscapes the scenes of mythological and historical events. As other artists frequently gave his name to their own productions, he made drawings of all his paintings and called the books in which they were contained *Libri di verita*. Such a collection containing 200 drawings, belongs to the duke of Devonshire; another, of 130 drawings to lord Holland.

CLAUDIANUS, Claudius, a Latin poet, a native of Alexandria lived under the emperor Theodosius and his sons, and was an experienced warrior, as well as a writer of merit. His poems gained him such renown, that, at the desire of the senate, the emperors Arcadius and Honorius erected a statue to his honour in the forum of Trajan, with the inscription, that he combined the genius of Virgil and of Homer. Besides several panegyrical poems on Honorius, Stilicho, and others, we possess two of his epic poems, the Rape of Proserpine, and an unfinished Gigantomachia, eclogues, epigrams, and occasional poems. He exhibits a brilliant fancy, rich colouring, great variety and precision in his descriptions, but he is often deficient in taste and gracefulness of thought. The best editions of his works are those of Gessner, Leipsic, 1759, and of Burmann, Amsterdam, 1760, 4to.

CLAUDIUS (Tiberius) Drusus Cæsar, a Roman emperor, the youngest son of the elder Claudius Drusus Nero and Antonia the younger, the daughter of Augustus's sister, born at Lyons, grew up without any education, for the most part among slaves and women, and was an object of ridicule and scorn at court. He lived as an unimportant private man, and occupied himself with literature. Among other works, he wrote a Roman history, embracing the period from the death of Cæsar to his own time in 43 volumes, and also his own life. After the murder of Caligula, the body guard, who were ransacking the palace, discovered him secreted in a corner, dragged him out, and proclaimed him emperor (41 A. D.). The senate, who had determined on the restoration of the republic were forced to confirm the appointment. Claudius, suddenly transferred from retirement and oppression to uncontrolled power, distinguished the beginning of his reign by some praiseworthy acts; he recalled the exiles, and restored their estates to them; embellished Rome, and erected several large buildings for the public good. He made Mauritania a Roman province; his armies fought successfully against the Germans. and kept possession of several strong places in Britain. But he sunk into debauchery and voluptuousness; and his wives, particularly the infamous Messalina (q. v.), together with his freedmen, administered the government, sold offices and places of honour, and committed the greatest atrocities unpunished. He died of poison administered by his second wife, Agrippina (mother of Nero), at the age of sixty-three, A. D. 54. His deification was the cause of Seneca's pasquinade entitled *Apokolokynthosis*.

CLAUDIUS, Matthias (called *Asmus* or the *Wandsbeck Messenger*), a German poet, whose prose and poetry bear a peculiar stamp of humour, frankness, and cordiality, was born, in 1741, at Reinfeld, in Holstein near Lubeck. In 1775, he made a collection of his compositions which had appeared in the Wandsbeck Messenger, and other periodicals, with the addition of some which had not been printed, and gave the collection the title *Asmus omnia sua secum portans, or Complete Works of the Wansbeck Messenger* (complete till 1812, in 8 vols.). He wrote on a great variety of subjects. All his works are of a popular character. They are written in a natural, intelligible, and often humorous style, and support the cause of good morals, benevolence, patriotism, and piety, while they attack folly and vice with the weapons of ridicule and scorn. Many of his songs have been set to music by the first composers, and have become a part of the national melodies. In the latter part of his life, he became a convert to religious mysticism, and died at Hamburg, Jan. 21, 1815, after having filled several public offices.

CLAUSENBURG, or COLOSVAR; a town in Transylvania, capital of the land of the Hungarians and of a county of the same name, on the Samos; 145 miles N. N. E. Belgrade. 225 E. S. E. Vienna; lon. 23° 35′ E.; lat. 46° 44′ N.; population, 18,210; number of houses, 1200. It became the seat of government of Transylvania about 1790. It is situated in a romantic valley, surrounded on all sides by lofty mountains, and has a handsome public square, several elegant streets, fine gardens, and public walks. It contains five Catholic churches, two Calvinist, one Lutheran, one Unitarian, two hospitals, a Catholic college, containing, in 1814, 232 students; a Reformed college with 636 students; and a Unitarian college with 206 students.

CLAUSEWITZ, Charles von, Prussian major-general, director of the general military school at Berlin, born, June 1, 1780, at Burg, entered the military service in 1792, and took part in the campaigns of 1793 and 1794. He was also active in the war against Napoleon, in the service of Russia and Prussia, and has distinguished himself by his *Uebersicht des Feldzugs von* 1813 (Survey of the Campaign of 1813).

CLAVICHORD. See *Clarichord.*

CLAVICIMBALUM; the name originally given to the harpsichord.

CLAVI-CYLINDER. See *Chladni.*

CLAVIGERO, Francesco Saverio; a Spanish historian, who was a native of Vera Cruz, in Mexico. He was educated as an ecclesiastic, and resided nearly forty years in the provinces of New Spain, where he acquired the languages of the Mexicans and other indigenous nations, collected many of their

traditions, and studied their historical paintings, and other monuments of antiquity. The first of his researches was a History of Mexico, written in Italian, of which an English translation in 2 vols. 4to. was published in 1787. This is a most comprehensive work, affording a great deal of information relative to the natural and civil history, antiquities, and religion of Mexico; but it displays more industry than judgment on the part of the author.

CLAVIJO Y FLAXARDO, Don Joseph; a Spaniard, who fell a sacrifice to a quarrel with Beaumarchais. He lived in Madrid, where he had the reputation of an intelligent scholar, and had published a journal, *El Pensador*, and other useful works, when his connexion with the sister of Beaumarchais, whom he had loved, and then forsaken, gave rise to an affair of honour between him and the brother of the lady, who was formidable for talent rather than courage. This affair nearly occasioned Clavijo the the loss of his life, and deprived him of his office and the good opinion of his fellow citizens. He passed the remainder of his life under a kind of dishonour which the representations of his adversary had brought upon him. For more than twenty years, he superintended the publication of the *Mercurio Historico y Politico de Madrid*, with which he had been intrusted as early as 1773. He likewise translated Buffon's Natural History into Spanish (Madrid, 1785—90, 12 vols.). He was vice-director of the cabinet of natural history, and director of the *Theatre de los Sitios*, when he died in 1806. Far from resembling the detestable portrait which Beaumarchais draws of him, Clavijo was of a mild disposition, upright character, and a clear understanding. Gœthe founded his tragedy *Clavigo* on Beaumarchais's story.

CLAVIS (Latin for *key*) is often used for a drawing, an index, &c., which serves as a guide to the understanding of another work; for instance, *clavis Ciceronia*, *clavis Homerica*, &c.

CLAY is a mixture of decomposed minerals, and hence it is by no means uniform in its composition. Several varieties soften in water, and allow themselves to be kneaded and formed into moulds—a property by which they are fitted for the use so commonly made of them. Some are easily fusible, others refractory; some acquire particular tints, others lose their colour and become white when exposed to a strong heat; upon all of which properties their applicability depends. They occur in beds near the surface of the earth, or, covered by the soil, in the formations of brown and black coal. In the latter situation, they often contain remains of vegetables, and are called *slate clay*, which is intimately related to bituminous shale and alum-earth. Alumine is the basis of all clays, and imparts to them their predominating characters. It is mixed with very variable proportions of silex, magnesia, lime, and oxide of iron. The varieties of clay are of various important applications in pottery, in manufacturing stone-ware and porcelain, in constructing furnaces for metallurgic operations, &c.—Some of the principal varieties are *indurated clay*, or *clay stone*, which is clay in its highest state of induration. It is soft, but not easily diffused in water, and does not form with it a ductile paste.—*Porcelain clay*, so named from the use to which it is applied, is white, with occasional shades of yellow and grey. It is dull and opaque; feels soft; in water, it falls to powder, and, when kneaded, it forms a ductile paste. It is, in general, infusible by any heat that can be raised. It consists essentially of silex and alumine; that of Cornwall contains sixty parts of alumine with twenty of silex.—*Potter's clay* and *pipe clay* are similar, but less pure, generally of a yellowish or grayish colour, from the presence of iron.—*Loam* is the same substance mixed with sand, oxide of iron, and various other foreign ingredients.—The *boles*, which are of a red or yellow colour, are of a similar composition, and appear to owe their colours to oxide of iron. They are distinguished by their conchoidal fracture.—The *ochres* are similar to the boles, containing only more oxide of iron.—*Fuller's earth* has an earthy fracture, sometimes slaty, is dull and opaque. In water, it falls to powder, without forming a ductile paste. It is used to remove grease from cloth.—*Tripoli* is found loose or indurated; its fracture is earthy; it feels harsh and dry; does not adhere to the tongue. It is used for polishing the metals and glass.—The clays are too generally distributed to require the enumeration of their localities. See the article *China-ware*.

CLEMENCE ISAURE, daughter of Ludovico Isaure, born in 1464, near Toulouse, lost her brave father when she was only five years old. She was educated in solitude, and grew up, endowed by nature with beauty and talents. Near to her garden dwelt a young troubadour, named *Raoul*, who became enamoured of her, and communicated his passion in songs, in which her name and his were united. The maiden replied, not with words, but with flowers, agreeably to the petition of her lover—

> Vous avez inspiré mes vers,
> Qu'une fleur soit ma recompense—

and Raoul could well interpret their meaning. He was the natural son of count Raymond of Toulouse, and followed his father to the war against the emperor Maximilian. In the battle of Guigenaste, both were slain, and Isaure resolved to take the veil. Before doing so, however, she renewed the poetic festival which had been established by the gay company of the seven troubadours, but had been, for a long time, forgotten, gave it the name of *Jeux floraux* (q. v.), and assigned, as prizes for the victors of the poetical contests, the five different flowers which had served her as means for replying to her lover's passion. These flowers were wrought in gold and silver. Clemence Isaure appropriated all her fortune to the support of this institution. She was versed herself in the *gaye science*, and, having fixed upon the 1st of May as the day for the distribution of the prizes, she composed an ode on spring, which acquired for her the surname of the *Sappho of Toulouse*.

CLEMENT; the name assumed by many popes. Of these, *Clement XIV.*, who abolished the order of Jesuits, was perhaps the most distinguished. He died in 1774.

CLEMENT, Titus Flavius (probably a native of Athens, but, on account of the place of his residence, commonly called *the Alexandrian*), was one of the most famous teachers of the Christian church, in the second and at the beginning of the third century. He had been a heathen philosopher, was converted to Christianity, and, after travelling a long time in Greece, Italy, and the East, became presbyter of the church of Alexandria, and teacher (*catechetes*) of the school in that city, in which place he succeeded Pantænus, his teacher, and was succeeded by Origen, his pupil. These three instructors increased the fame of the Alexandrian school in the second and third centuries. Clement was a fertile writer. The most important among those of his productions which have been handed down to us, are inscribed Προτρεπτικὸς, Παιδαγωγὸς, and Στρωματεῖς, or Στρώματα. The first is an exhortation to the heathens to embrace Christianity, the second an exposition of Christian morals, and the third, which exhibits the most varied erudition, has the title *Carpets*, on account of the variety of subjects, moral, metaphysical, theological, historical, which are here interwoven. It has been justly remarked that these works are an imitation of the degrees of the Greek mysteries. The first was the

Ἀποκάθαρσις, the purification from the former life; the second the Μύησις, consecration; the third the Ἐποπτεία, inspection. The works of Clement are of great importance, as enabling us to judge of the state of science in his time, and because they contain fragments and accounts of lost works of antiquity. Clement introduced the eclectic philosophy into Christianity, and promoted the allegorical and mystical explanation of the sacred writings. The philosophy and erudition which gained him the admiration of his time, but also seduced him, at times, into singular speculations, caused him, at a later period, to be considered a heretic, and to lose, with the orthodox, the name of *saint*, which had been conferred on him. The first editions of his works are that at Florence, in 1550, and that at Heidelberg (Commelin.), 1592, by Frederic Sylburg, both in folio. The most complete is that of John Potter, Oxon., *A Theatro Sheldon.* 1715, reprinted at Venice, 1757.

CLEMENTI, Muzio; a distinguished performer on the piano-forte, was born in Rome, in 1752. His father, a silversmith, was himself fond of music, and had his son instructed as well as his means allowed, young Clementi showing great talent and inclination for this art. Buroni, one of his relations, was his first master. In his seventh year, an organist, Cordicelli, instructed him in thorough-base, and, in his ninth year, he passed an examination as an organist. He then received instruction from the famous singer, Santarelli, and from Carpini, the celebrated contrapuntist. At this time, in his twelfth year, he wrote a mass for four voices, which was received with great applause. He had made such progress in his performance on the piano-forte, that an Englishman, Mr Beckford, was anxious to take him to England. The father at length consented, and young Clementi studied at the country seat of Mr Beckford, in Dorsetshire, and soon made himself master of the English language. In his eighteenth year, he far excelled all his contemporaries in skill and expression, and published his *Opus II.*, which formed a new epoch in this species of composition. It has furnished the basis of all modern sonatas for the piano-forte, and its simplicity and novelty have attracted the admiration of all connoisseurs and amateurs. After leaving Dorsetshire, he was engaged as director of the orchestra of the opera in London. His fame increased rapidly. In the year 1780, he went to Paris, where he was received with enthusiasm. From thence he proceeded, in the summer of 1781, to Vienna, where he became acquainted with Mozart and Haydn, and played before the Emperor Joseph II. with the former. He likewise published several compositions. In 1784, he repeated his visit to Paris, but, after that, remained in England till 1802.—The loss which he sustained from the failure of a large commercial establishment induced him to give lessons in music for a time. In his leisure hours, he occupied himself with playing on the piano-forte, and the improvement of this instrument. He had previously published his famous Introduction to the Art of Piano-forte Playing. In the year 1802, he went to Paris, for the third time, with his scholar Field; from thence to Vienna and to St Petersburg, where Field remained. Clementi was universally admired. From Petersburg, the piano-forte player Zeuner followed him to Berlin and Dresden. From Dresden, he was accompanied by Klengel the organist, who was anxious to improve under his care. At Berlin, Clementi married his second wife, whom he took with him into Italy, but lost on his return to Berlin. He then went anew to St Petersburg, with the distinguished piano-forte performer and instructor Berger, and afterwards returned again to Vienna. In the following year, family concerns carried him to Rome and Milan. In the summer of 1810, he ventured, notwithstanding the closure of the continental ports, to return to England, where he arrived safely, and married his third wife. In the mean time, he continued to compose, and wrote some grand symphonies for the philharmonic society. One of his most valuable works is his *Gradus ad Parnassum* which occupied him a long time. He likewise superintended the construction of instruments, and this business was very lucrative to him. He had one of the principal musical establishments in London, his instruments being highly esteemed. In 1820, he again went to the continent, and remained at Leipsic till Easter in 1821, where two new symphonies of his were performed. He died on the 10th March, 1832, and was interred in Westminster Abbey.

CLEMENTINES; the name given to certain ordinances proceeding from popes of the name of *Clement*, chiefly such as were given at the council of Vienne, in 1311, by Clement V. (q. v.), and which form a part of the *corpus juris canonici*. See *Canon Law*.

CLEOBIS and BITON. Herodotus relates an affecting story of these two youths, the sons of Cydippe, chief-priestess of Juno at Argos. At the Ἡραῖα, a feast in honour of Juno, it was customary for the chief-priestess to be drawn by two white oxen. On one occasion, the procession had already begun to move, and the oxen had not arrived; upon which Cleobis and Biton drew the chariot of their mother, for a distance of forty-five stadia, up the mountain where the temple of Juno stood. The people applauded, and the mother was so affected by this instance of filial affection, that she begged the goddess to grant her sons the best gift which could be conferred on mortals. While the youths were yet in the temple, a soft sleep fell upon them and they never awoke. (*Herodot.* i., 31.) The Argives placed the statues of Cleobis and Biton in the temple at Delphi, and in a temple at Argolis they were represented drawing the chariot of their mother. (*Pausan.* ii., 20.)

CLEOBULUS; one of the *seven wise men*, as they were called; a native of Lindus, or, according to some, of Rhodes, or Caria. He travelled to Egypt to learn wisdom, like many of the sages of Greece. He was king of Rhodes, and was succeeded on the throne by his daughter Cleobulina. Several of his sayings are extant.

CLEOMBROTUS; son of Pausanias, king of Sparta. During his reign began the Theban war, in which he commanded the Spartans against Epaminondas and Pelopidas. He was killed in the battle of Leuctra, which happened July 8, 371 B. C., according to the Julian calendar. See *Epaminondas*.

CLEOMENES; the name of three kings of Sparta, the most distinguished of whom is Cleomenes III., son of Leonidas. He intended to reform Sparta, and to restore the institutions of Lycurgus, after the example of Agis, his brother, who had lost his life in a similar attempt. Cleomenes distinguished himself in a war against the Achæans, commanded by Aratus. Returning to Sparta with a part of the army, he put to death the ephori, made a new division of lands, and introduced again the old Spartan system of education, made his brother his colleague, and provided that in future two kings should always sit on the throne of Sparta. He lived very simply, was just and friendly towards every body. He treated his enemies with generosity; for instance, the Achæans, who had begun a new war and were conquered. He showed himself an able general, in a war against the Macedonians and Achæans united, but, at last, lost the important battle of Sellasia. Cleomenes fled to Egypt, where he was supported by Ptolemy Euergetes, but his son Ptolemy Philopator kept Cleomenes in confinement; upon which he and twelve fellow prisoners

killed each other. With Cleomenes expired the race of the Heraclidæ which had sat on the throne of Sparta.

CLEON. See *Pericles*.

CLEOPATRA. Amongst several Egyptian princesses of this name, the most renowned was the eldest daughter of Ptolemy Auletes, wife to his eldest son Ptolemy, with whom she shared the throne of Egypt. Both were minors at the death of their father, and were placed under the guardianship of Pothinus and Achilles, who deprived Cleopatra of her share in the government. She went to Syria, and was forming plans for obtaining her rights by force, when Cæsar (q. v.) came to Alexandria, and, captivated with her youthful charms, seconded her claims; and though the people of Alexandria were excited to a revolt by the arts of her brother, Cæsar succeeded in pacifying them, and procured Cleopatra her share of the throne. But Pothinus stirred up a second revolt, upon which the Alexandrian war commenced, in which the elder Ptolemy losing his life, Cæsar proclaimed Cleopatra queen of Egypt; but she was compelled to take her brother, the younger Ptolemy, who was only eleven years old, as her husband and colleague on the throne. Cæsar continued some time at Cleopatra's court, and had a son by her named Cæsarion. After Cæsar's departure, she governed undisturbed. She subsequently made a journey to Rome, where Cæsar received her magnificently, and erected a statue to her, next to the statue of Venus, in the temple consecrated to that deity. This act, however, excited the displeasure of the people, and Cleopatra soon returned to her own dominions. When her brother, at the age of fourteen, demanded his share in the government, Cleopatra poisoned him, and remained sole possessor of the regal power. During the civil war in Rome, she took the part of the triumvirs, and, after the battle of Philippi, she sailed to join Antony at Tarsus. She was then twenty-five years old, and combined with extraordinary beauty great wit and the highest elegance of manners. She appeared in a magnificently decorated ship, under a golden canopy, arrayed as Venus, surrounded by beautiful boys and girls, who represented Cupids and Graces. Her meeting with Antony was attended by the most splendid festivals. After having accompanied him to Tyre, she returned to Egypt. Antony followed her, and gave himself up to the most extravagant pleasures. She accompanied him on his march against the Parthians, and, when he parted from her on the Euphrates, he bestowed Cyrene, Cyprus, Cœlosyria, Phœnicia, Cilicia, and Crete on her, to which he added part of Judea and Arabia, at her request. After this, Antony conquered Armenia, returned triumphantly to Egypt, and made his three sons by Cleopatra, and also Cæsarion, kings. Now commenced the war between Octavius and Antony; but, instead of acting promptly against his adversary, Antony lost a whole year in festivals and amusements with Cleopatra at Ephesus, Samos, and Athens, and at last determined to decide the contest by a naval battle. At Actium (q. v.) the fleets met. Cleopatra, who had brought Antony a reinforcement of sixty vessels, suddenly took to flight, and thus caused the defeat of her party; for Antony, as if under the influence of frenzy, immediately followed her. They fled to Egypt, and declared to Octavius that if Egypt were left to Cleopatra's children, they would thenceforth live in retirement. But Octavius demanded Antony's death, and advanced towards Alexandria, which Antony hastened to defend. Cleopatra determined to burn herself with all her treasures, but Octavius pacified her by private messages. These communications, however, did not remain concealed from Antony, who, supposing Cleopatra treacherous, hastened to her, to avenge himself by her death. She, however, escaped, and took refuge in the monument destined for her sepulchre, which she had erected near the temple of Isis, and caused the report of her suicide to be circulated. Antony now threw himself upon his sword, but before he expired was informed that Cleopatra was still living, upon which he caused himself to be carried into her presence, and breathed his last in her arms. Octavius succeeded in getting Cleopatra into his power, who still hoped to subdue him by her charms; but her arts were unavailing, and, becoming aware that her life was spared only that she might grace the conqueror's triumph, she determined to escape this ignominy by a voluntary death. She ordered a splendid feast to be prepared, desired her attendants to leave her, and put an asp, which a faithful servant had brought her, concealed amongst flowers, on her arm, the bite of which caused her death almost immediately (B. C. 30). Octavius, in his triumphal procession, had a portrait of the queen, with a serpent on her arm, carried before him. Her body was interred near that of Antony. At the time of her death, she was thirty-nine years old, and had reigned twenty-two years.

CLEPSYDRA (Greek, κλεψύδρα from κλέπτω, I steal, and ὕδωρ, water) was the name of an instrument intended to measure time by the falling of drops of water, and not unlike our hour-glasses. The length of time which it measured was not uniform (*Plin.* Ep. ii. 11.) They were an important instrument in the Greek and Roman courts. To prevent the lawyers from speaking too long, a particular period was assigned to them, to be determined by the clepsydra, and, in Greece, an ἰφύδωρ was appointed to watch the instrument and to prevent fraud. If the laws, quoted by the advocate, were read, the clepsydra was stopped (*aquam sustinere*). Sometimes advocates petitioned for more time; hence the expression, *dare* or *petere plures clepsydras*, or *clepsydras clepsydris addere*. Pompey, in his third consulate, introduced these instruments into the Roman courts. They were also used for domestic purposes. The *horologia ex aqua* was of a more artificial construction.

CLERGY (from the Latin *clerus*, derived from the Greek κλῆρος, the share or heritage) signifies the body of ecclesiastical persons, in contradistinction to the *laymen*. The Greek word was applied in this sense, in order to indicate that this class was to be considered as the particular inheritance and property of God —a metaphor taken from the Old Testament. The *clerus* was divided, in the ancient church, into the high and low. To the former belonged the bishops, presbyters, and deacons; to the latter, all other ecclesiastical persons. The support of the clergy in different countries constitutes an interesting subject in political economy, and has been investigated in a work entitled, *Remarks on the Consumption of the Public Wealth by the Clergy of every Nation;* London, 1822, 2d ed. (See *Church* and *Ecclesiastical Establishments*.) When a Catholic priest receives the tonsure, he repeats a part of the 16th psalm, "The Lord is the portion of mine inheritance," &c. The Catholic clergyman, according to the doctrine of the Romish church, is endowed, in his spiritual character, with a supernatural power, which distinguishes him essentially from the layman, as the power to forgive sins, and to consecrate the bread, so as to convert it into the real body of Christ, &c.

CLERGY, BENEFIT OF. See *Benefit of Clergy*.

CLERK, JOHN, of Eldin; the alleged inventor of the modern British system of naval tactics. See the article *Naval Tactics*.

CLEVELAND; a post-town of Ohio, and capital of Cuyahoga county, on lake Erie, at the mouth of

the Cuyahoga, at the point where the Ohio canal reaches lake Erie, sixty miles E. of Sandusky, 180 W. S. W, of Buffalo, 160 N. E. of Columbus; lon. 81° 46′ W.; lat. 41° 31′ N. It is a flourishing town, important from its situation at the termination of the Ohio canal, and from its connexion with the steamboat navigation from Buffalo, and is one of the most considerable commercial places on lake Erie.

CLEVES, formerly the capital of the dukedom of Cleves, now the chief place of the Prussian circle of the same name (1080 square miles, with 210,000 inhabitants), is situated in a pleasant plain, a league from the Rhine, with which it is connected by a canal. The city contains 1000 houses, with 6000 inhabitants. It has many manufactures, particularly of wool, cotton and silk. The iron sarcophagus of a prince Maurice, of Nassau-Siegen, buried here, is surrounded by Roman urns, inscriptions, lamps, &c., which are found in the neighbourhood. Prussia acquired Cleves as early as 1609; and, after it had changed masters several times, it came again into the possession of this government. It is now a strong fortress, lying on the small river Kermisdal, over against the Netherlands. The German dialect spoken here much resembles the Dutch.

CLIENTS, in ancient Rome, were citizens of the lower ranks, who chose a patron from the higher classes, whose duty it was to assist them in legal cases, to take a paternal care of them, and to provide for their security. The clients, on the other hand, were obliged to portion the daughters of the patron, if he had not sufficient fortune; to ransom him, if taken prisoner, and to vote for him, if he was candidate for an office. Clients and patrons were under mutual obligation not to accuse each other, not to bear witness against each other, and, in general, not to do one another any injury. Romulus, who had established this relation, in order to unite more firmly the patricians and plebeians, made a law that he who had omitted his duty as client or patron might be slain by any body. During a period of 600 years, no instance was known of a disagreement between the clients and patrons. This relation continued till the time of the emperors. It is certainly among the most interesting and curious which history mentions, and must be considered as one of the first attempts at a regular government; as the transition from a patriarchal state, in which family relations are predominant, to a well-developed political system, securing the rights and independence of the individual. —In modern times, the word *client* is used for a party to a lawsuit, who has put his cause into the hands of a lawyer.

CLIFFORD, George, the third earl of Cumberland of that family, eminent both for his literary and military abilities, was born in Westmoreland, in 1558. He studied at Peterhouse in Cambridge. His attention, at this period, was principally directed to mathematics and navigation, in both which he became a great proficient. In 1586, he took part in the trial of queen Mary Stuart; and, in the course of the same year, sailed to the coast of South America, having under his command a small squadron, which sensibly annoyed the Portuguese trade in that part of the world. Two years afterwards, he commanded a ship in the ever-memorable action with the "invincible armada," and subsequently fitted out, at his own expense, no fewer than nine expeditions to the Western Islands and the Spanish main, in one of which he succeeded in capturing a valuable Plate ship. His skill in martial exercises and knightly accomplishments on shore was no less distinguished than his naval tactics; and queen Elizabeth, with whom he was in great favour, not only appointed him her champion in the court tournaments but employed him in the more serious task of reducing the headstrong Essex to obedience. He was made a knight of the garter in 1591. He died Oct. 30, 1605, in London.

CLIFFORD, Anne, a spirited English lady, the only daughter of the above, was born in 1589. Her first husband was Richard, lord Buckhurst, by whom she had three sons, who died young, and two daughters. Her second husband was the eccentric Philip, earl of Pembroke, by whom she had no issue. She wrote memoirs of her first husband, and memorials of herself and progenitors, all of which remain in manuscript. In the course of her life, she built two hospitals, and erected or repaired seven churches. She also erected monuments to the poets Spenser and Daniels, the latter of whom was her tutor. She is, however, more celebrated for a high-spirited reply to Sir Joseph Williamson, secretary of state, after the restoration, who had presumed to nominate a candidate for her borough of Appleby:—"I have been bullied," she writes, "by a usurper; I have been neglected by a court; but I will not be dictated to by a subject: your man sha'n't stand."

CLIFFS, or CLEVES; certain indicial characters placed at the beginning of the several staves in a composition, to determine the local names of the notes, and the sounds in the great scale which they are intended to represent. The three cliffs now in use, viz., the F, or base cliff, the C, or tenor cliff, and the G, or treble cliff, by the several situations given them on the stave, furnish us with the means of expressing all the notes within the usual compass of execution, both in vocal and instrumental music, without a confused addition of leger lines, either above or beneath the stave.

CLIMACTERIC (*annus climactericus*); a critical year or period in a man's age, wherein, according to astrologers, there is some notable alteration to happen in the body, and a person is exposed to great danger of death. The word comes from κλιμακτηρ, derived from κλιμαξ, a ladder or stairs. The first climacteric is, according to some, the seventh year. The others are multiples of the first, as, 14, 21, &c. 63 and 84 are called the grand climacterics, and the dangers attending these periods are supposed to be great. Some held, according to this doctrine, every seventh year a climacteric; others allowed this title only to the product of the multiplication of the climacterical space by an odd number, as 3, 5, 7, 9. Others considered every ninth year as a climacteric. The idea of climacterics is very ancient.

CLIMATE. The ancients denoted by this name the spaces between the imaginary circles, parallel to the equator, drawn in such a manner over the surface of the earth, that the longest day in each circle is half an hour longer than in the preceding. According to this division, there were twenty-four climates from the equator, where the longest day is twelve hours, to the polar circle, where it is twenty-four hours. From the polar circle, the longest day increases so rapidly, that, only one degree nearer the pole, it is a month long. The *frigid zones*, so called, that is, the regions extending from the northern and southern polar circles to the corresponding poles, some geographers have divided again into six climates. We have learned from a more accurate acquaintance with different countries, that heat or cold depends not merely on geographical latitude, but that local causes also produce great variations from the general rule, by which a region lying near the equator should always be warmer than one remote from it. By the word *climate*, therefore, we understand the character of the weather peculiar to every country, as respects heat and cold, humidity and dryness, fertility, and the alteration of the seasons. The nature of a climate is dif-

terent according to the different causes which affect it, and the observations hitherto made have led, as yet, to no definite result. In general, however, geographical latitude is the principal circumstance to be taken into view in considering the climate of a country. The highest degree of heat is found under the equator, and the lowest, or the greatest degree of cold, under the poles. The temperature of the intermediate regions is various, according to their position and local circumstances. Under the line, the heat is not uniform. In the sandy deserts of Africa, particularly on the western coast, also in Arabia and India, it is excessive. In the mountainous regions of South America, on the contrary, it is very moderate. The greatest heat in Africa is estimated at 70° of Réaumur, or 189½° of Fahrenheit. The greatest degree of cold at the poles cannot be determined, because no one has ever penetrated to them. The greatest altitude of the sun at noon, and the time of its continuance above the horizon, depends altogether on the latitude. Without regard to local circumstances, a country is warmer in proportion as the sun's altitude is greater and the day longer. The elevation of any region above the surface of the sea has likewise an important influence on the climate. But the nature of the surface is not to be disregarded. The heat increases as the soil becomes cultivated. Thus, for the last thousand years, Germany has been growing gradually warmer by the destruction of forests, the draining of lakes, and the drying up of bogs and marshes. A similar consequence of cultivation seems to be apparent in the cultivated parts of North America, particularly in the Atlantic states. The mass of minerals, which composes the highest layer of a country, has, without doubt, an influence on its temperature. Barren sands admit of a much more intense heat than loam. Meadow lands are not so warm in summer as the bare ground.* The winds, to which a country is most exposed by its situation, have a great influence on the climate. If north and east winds blow frequently in any region, it will be colder, the latitude being the same, than another, which is often swept by milder breezes from the south and west. The influence of the wind on the temperature of a country is very apparent in regions on the sea-coast. The difference in the extremes of temperature is least within the tropics. The heat, which would be intolerable when the sun is in the zenith, is mitigated by the rainy season, which then commences. When the sun returns to the opposite half of the torrid zone, so that its rays become less vertical, the weather is delightful. Lima and Quito, in Peru, have the finest climate of any part of the earth. The variations in temperature are greater in the temperate zones, and increase as you approach the polar circles. The heat of the higher latitudes, especially about 59° and 60° amounts, in July, to 75° or 80° of Fahrenheit, and is greater than that of countries 10° nearer the equator. In Greenland, the heat in summer is so great that it melts the pitch on the vessels. At Tornea, in Lapland, where the sun's rays fall as obliquely at the summer solstice as they do in Germany at the equinox, the heat is sometimes equal to that of the torrid zone, because the sun is almost always above the horizon. Under the poles, the climate is, perhaps, the most uniform. A greater degree of cold than any we are accustomed to, seems to reign there perpetually. Even in midsummer, when the sun does not go down for a long time (at the poles not for six months), the ice never thaws. The immense masses of it, which surround the poles, feel no sensible effect from the oblique and feeble beams of the sun, and seem to increase in magnitude every year. This is very remarkable; for there is the most undoubted evidence that these now deserted countries were, in former ages, inhabited. But, within a few years, large portions of this continent (if we may so call it) of ice have separated, and floated down to southern seas. This led the British government to adopt the project of penetrating to the north pole. See *North Polar Expeditions*.

From the general division of America into lofty mountainous *plateaus* and very low plains, there results a contrast between two climates, which, although of an extremely different nature, are in almost immediate proximity. Peru, the valley of Quito, and the city of Mexico, though situated between the tropics, owe to their elevation the general temperature of spring. They behold the *paramos*, or mountain ridges, covered with snow, which continues upon some of the summits almost the whole year, while, at the distance of a few leagues, an intense and often sickly degree of heat suffocates the inhabitants of the ports of Vera Cruz and of Guayaquil. These two climates produce each a different system of vegetation. The flora of the torrid zone forms a border to the fields and groves of Europe. Such a remarkable proximity as this cannot fail of frequently occasioning sudden changes, by the displacement of these two masses of air, so differently constituted—a general inconvenience, experienced over the whole of America. Everywhere, however, this continent is subject to a lower degree of heat than the same latitudes in the eastern portion of the earth. Its elevation alone explains this fact, as far as regards the mountainous region; but why, it may be asked, is the same thing true of the low tracts of the country? To this the great observer, Alexander Humboldt, in his *Tableaux de la Nature*, makes the following reply: "The comparative narrowness of this continent; its elongation towards the icy poles; the ocean, whose unbroken surface is swept by the trade winds; the currents of extremely cold water which flow from the straits of Magellan to Peru; the numerous chains of mountains, abounding in the sources of rivers, and whose summits, covered with snow, rise far above the region of the clouds; the great number of immense rivers, that, after innumerable curves, always tend to the most distant shores; deserts, but not of sand, and consequently less susceptible of being impregnated with heat; impenetrable forests, that spread over the plains of the equator, abounding in rivers, and which in those parts of the country that are the farthest distant from mountains and from the ocean, give rise to enormous masses of water, which are either attracted by them, or are formed during the act of vegetation, all these causes produce, in the lower parts of America, a climate which, from its coolness and humidity, is singularly contrasted with that of Africa. To these causes alone must we ascribe that abundant vegetation, so vigorous and so rich in juices, and that thick and umbrageous foliage, which constitute the characteristic features of the new continent." To these remarks Malte-Brun adds (*Universal Geogra-*

* The cultivation of a new country is often attended by most disastrous consequences, which ought not, always, to be imputed to the improvidence of colonists. The new soil, the moment that it is broken up by the plough, and penetrated by the rays of the sun, must necessarily undergo a strong evaporation, and its exhalations, which are not always of a harmless kind, little elevated in the air, are condensed by the cold, which still continues to be sharp, particularly during the night. Hence arise those epidemic maladies which ravage colonies newly established. The destruction of forests, when carried too far, is followed by pernicious effects. In the Cape de Verd islands, it is the burning of the forests which has dried up the springs, and rendered the atmosphere sultry. Persia, Italy, Greece, and many other countries, have thus been deprived of their delightful climates.

phy, vol. v. book lxxv.): "Assuming this explanation as sufficient for South America and Mexico, we shall add, with regard to North America, that it scarcely extends any distance into the orrid zone, but, on the contrary, stretches, in all probability, very far into the frigid zone, and, unless the revived hope of a north-west passage be confirmed, may, perhaps, reach and surround the pole itself. Accordingly, the column of frozen air attached to this continent is no where counterbalanced by a column of equatorial air. From this results an extension of the polar climate to the very confines of the tropics; and hence winter and summer struggle for the ascendency, and the seasons change with astonishing rapidity. From all this, however, New Albion and New California are happily exempt; for, being placed beyond the reach of freezing winds, they enjoy a temperature analogous to their latitude. (For further information, see Malte-Brun's *Universal Geography*, book xvii. and the article *Wind*.)

CLIMAX (from the Greek κλίμαξ, a ladder or stairs) and ANTICLIMAX are rhetorical figures; in the former of which the ideas rise in degree; in the latter, they sink. *Climax* was also the name of several mountains—one in Arabia Felix; another in Pisidia; another in Phœnicia; also of a castle in Galatia; also of a place in Peloponnesus, and another in Libya.

CLINGSTONE. See *Peach*.

CLINICAL MEDICINE (from the Greek κλίνη, a bed) teaches us to investigate, at the bedside of the sick, the true nature of the disease in the phenomena presented; to note their course and termination; and to study the effects of the various modes of treatment to which they are subjected. From this mode of study we learn the character of individual cases; theoretical study being competent to make us acquainted with species only. Clinical medicine demands, therefore, careful observation. It is, in fact, synonymous with experience. What advances would medicine have made, and from how many errors would it have been saved, if public instruction had always followed this natural course, so that pupils had received none but correct impressions and distinct conceptions of the phenomena of disease, and had attained a practical knowledge of the application of those rules and precepts, which dogmatical instruction always leaves indefinite! We are unacquainted with the method of clinical instruction in medicine, which was followed by the Asclepiades, but we cannot help admiring the results of it as exhibited to us in the writings of Hippocrates, who augmented the stores of experience inherited from them, by following in their steps. After his time, medicine ceased to be the property of particular families, and the path of experience, by which it had been rendered so valuable, was soon deserted. The slow progress of anatomy, and physiology, the constant study of the philosophy of Aristotle, and endless disputes respecting the nature of man, of diseases and of remedies, occupied all the attention of physicians; and the wise method of observing and describing the diseases themselves fell into disuse. Hospitals, at their origin, served rather as means of displaying the benevolence of the early Christians than of perfecting the study of medicine. The school of Alexandria was so celebrated, according to Ammianus Marcellinus, that a careful attendance upon its lessons entitled the student to pursue the practice of medicine. Another old and very thriving, although less known institution, was situated at Nisapour, in Persia; and hospitals, even before the flourishing period of the Arabians, to whom the happy idea is commonly ascribed, were united with these medical institutions. The last school, founded by the emperor Aurelian, and superintended by Greek physicians, spread the doctrines of Hippocrates through all the East. It was supported for several centuries, and in it, without doubt, Rhazes, Ali-Abbas, Avicenna, and the other celebrated Arabian physicians, were instructed. At the same time, the celebrated John Mesue, of Damascus, was at the head of the hospital of Bagdad. Of the mode of instruction pursued there, we know nothing; but we are inclined to form no very elevated opinion of the systems of an age which was devoted to all the dreams of Arabian *polypharmacy*. In truth, medicine shared the fate of all the other natural sciences in those barbarous ages. Men were little disposed to acquire, slowly and cautiously, the knowledge of disease, at the bedside of the sick, in the manner of the Greek physicians. It appears probable, that the foundation of universities led to a renewed attention to the study of medical science; and we find, accordingly, that in Spain, even under the dominion of the Arabians, there were schools and hospitals for the instruction of young physicians at Seville, Toledo, and Cordova. But, even then, clinical studies were almost wholly neglected. Instead of studying the history of diseases, the pupils occupied their time with the most unprofitable pursuits. Not much more advantageous were the journeys which were made for the same objects to Italy and France, in the eleventh and twelfth centuries. The schools of Paris and Montpellier were those principally resorted to; but in these, the instruction consisted simply in lectures and endless commentaries upon the most obscure subjects; and, even at the close of the fifteenth century, when the works of the Greek physicians began to be printed, men were still busied with verbal explanations and disputes. Two centuries elapsed before physicians returned to clinical studies and instructions. Among the renovators of this mode of studying medicine may be named, in Holland, William von Straten, Otho Heurnius, and the celebrated Sylvius, about the middle of the seventeenth century; and it is said that clinical instruction was given, at the same period, in the schools of Hamburg, Vienna, and Strasburg. Even Boerhaave, who succeeded Sylvius as clinical instructor at Leyden, in 1714, has left us no journals of daily observation of disease, but only academic discourses upon the general principles of medicine. The influence of this celebrated school was first perceived at Edinburgh, and afterwards at Vienna,—two schools which, in celebrity for clinical instruction, soon eclipsed their common mother, the school of Leyden. Cullen, one of the most celebrated teachers of practical medicine at Edinburgh, was too fond of fine-spun theories upon the condition of the diseased structures of the body, and the proximate causes of disease, ever to follow a uniform method in his lectures, and to adopt the entire history of disease, as observed at the bedside, as the basis of his system. From the account of what was effected in clinical medicine in Italy, Germany, and France, in the course of the 18th century, we may discover both the constantly increasing attention to this department of knowledge, and the difficulties with which such institutions are obliged to contend. The Vienna school, by means of the labours of Van Swieten, De Haen, and, still more, of Stoll and of Franck, became a model of clinical study, since public lectures were given in the hospitals, and the simplicity of Grecian medicine successfully inculcated. The practice and study of medicine in the hospitals in France, was only an indirect mode of gaining public confidence, till the period of the general revival of science, and the erection of the French *Ecole de Sante*. In that for the first time, clinical instruction was expressly commanded. At the present day, every good school has its establishment for clinical medicine connected with it; that is, an hospital, in

which diseases can be seen and studied by those attending it. In Germany, the empirical or experimental mode of studying medicine was early given up for the more scientific form of lectures; while in Britain and France, the opposite extreme took place, and students were carried, as they sometimes are still, to the bedside of the sick, before they had been properly grounded in elementary studies. In Germany, there are very numerous journals, which contain clinical reports of cases, as there are so many clinical institutions appropriated to particular classes of disease. In the American schools, clinical instruction is almost wholly overlooked, although some slight lectures of this description are given by the physicians of hospitals.—The clinical school is called *ambulatory*, when the patients attend only at particular hours; and it is termed *polyclinic*, when the instructor and his pupils visit together the beds of the sick.

CLINTON, Sir Henry, a British general who served in the Hanoverian war, and was sent to America, in 1775, with the rank of major-general, where he distinguished himself in the battle of Bunker hill. He was soon after sent against New York and Charleston, but without success. In a second attempt on New York, he entered the city, after having defeated the Americans on Long Island. Being appointed to the command of that station for the purpose of favouring the movements of general Burgoyne, his attempts were rendered ineffectual by the surrender of that general at Saratoga. In 1778, he succeeded Howe in the command of Philadelphia, which Washington obliged him to evacuate. In 1779, he obtained possession of Charleston. His connexion with Arnold (q. v.), his attempt to seduce the American troops by the offer of making up their arrears of pay, and his boast that there were more American royalists in the pay of the king than there were soldiers in the army of Washington, illustrate the system of corruption then adopted by the British generals in America. In 1782, Clinton returned to England, having been superseded by general Carleton. He died in 1795. His Narrative of his conduct in America (1782), was answered by lord Cornwallis; to whom Clinton replied in observations on Lord Cornwallis's answer (1783). He was also the author of observations on Stedman's History of the American War (1784).

CLINTON, De Witt, was born, March 2, 1769, at Little Britain, New York, North America. He was of English origin. His father served with great distinction during the revolutionary war, and became a major-general in the army of the United States. His mother was a De Witt, a member of the distinguished Dutch family of that name. Her parents had emigrated to America. He was educated at Columbia college, where he highly distinguished himself, and in due time, was admitted to the bar. But before he was able to acquire any practice of importance he was appointed private secretary to his uncle George Clinton, and continued in this office until the end of his relative's administration, in 1785. In the interim, he had been chosen secretary to the board of regents of the university, and to the board of fortifications of New York. In 1797, Mr Clinton was elected a member of the legislature of New York, at the time when the two great parties, which have since divided the country, were organized, and embraced the republican or democratic side. In 1800, he was chosen by the council of appointment, of which body he was a member, to support their cause in a controversy between them and governor Jay. This was finally settled by a convention, which met at Albany, in 1801, when the constitution of New York was modified in various ways. The same year he was chosen a member of the senate of the Union, in order to supply the vacancy occasioned by the resignation of general Armstrong and continued a member of that body for two sessions. After that period, he was chosen mayor of New York, and remained in this situation, with the intermission of but two years, until 1815, when he was obliged to retire, in consequence of the violence of party politics. In 1817, he was elected, almost unanimously, governor of the state; the two great parties having combined for the purpose of raising him to that dignity—so high was the general sense of his talents and services. This harmony continued until the distribution of offices, when, of course, discontent was excited, and at that time commenced a systematic opposition to his administration. He was re-elected, however, in 1820, notwithstanding the great exertions of the opposite party. In 1822, he declined offering himself again as a candidate, and retired into private life. In 1810, Mr Clinton had been appointed, by the senate of his state, one of the board of canal commissioners; but the displeasure of his political opponents, who were, at that time, greatly predominant in the legislature, was excited by the enthusiasm evinced in his favour at the canal celebration, in October, 1823, at Albany, and they deprived him of his office. This act, however, for which no reason could be assigned, occasioned a complete reaction of the public feeling towards him. His friends did not suffer the opportunity to escape, but again brought him forward as a candidate for the office of governor, and carried him, by a most triumphant majority, over colonel Young. In 1826, he was again elected, by a large majority, over judge Rochester; but he died before this term was completed. His decease was in consequence of a catarrhal affection of the throat and chest, which being neglected, occasioned a fatal disease of the heart. He expired almost instantaneously, whilst sitting in his library, after dinner, Feb. 11, 1828. The next day, business was suspended in Albany. The public testimonials of respect paid to his memory, throughout the state and Union, were almost numberless. His body was interred with every honour. Mr Clinton was tall, finely proportioned, and of a commanding aspect. In his domestic and social relations, he was cheerful and kind; in his friendships warm and sincere; and in his moral character, unexceptionable. His manners were rather distant and reserved, in consequence of long habits of abstraction, and a natural diffidence, of which he never could divest himself. He was an early riser, and extremely laborious, every moment which he had to spare from his necessary duties being devoted to the cultivation of his mind. No one was ever more ambitious of a reputation for science and literature. In some of the physical sciences he was especially versed, and his proficiency as a classical and belles-lettres scholar was very considerable. He was a member of a large part of the literary and scientific institutions of the United States, and an honorary member of many of the learned societies of Great Britain and the continent of Europe. His productions are numerous, and consist of his speeches in the state legislature and in the senate of the Union, his speeches and messages as governor; his discourses before various literary, philosophical, and benevolent institutions; his addresses to the army during the late war; his communications concerning the canal; and his judicial opinions; besides various fugitive pieces. His national services were of the greatest importance; the Erie canal especially, although his title to the merit of being the originator of the project may be disputed, will always remain a monument of his patriotism and perse-

verance. He was, also, a promoter and benefactor of many religious and charitable institutions.

CLIO; daughter of Jupiter and Mnemosyne; the muse of glory and history. Her attributes are, a wreath of laurel upon her head, a trumpet in her right hand, and a roll of papyrus in her left. See *Mythology, Greek*.

CLITUS; son of Dropis, and brother of Hellanice, the nurse of Alexander the Great. He was one of the generals of Philip and Alexander, and saved the life of the latter in the battle of the Granicus, by cutting off the hand of Rhosaces, who had just lifted up his arm to kill Alexander. Notwithstanding this service, however, Alexander slew him in a fit of intoxication, on account of some irritating words. After the act was performed he was penetrated with the bitterest remorse.

CLIVE, Catharine, a celebrated comic actress, was the daughter of a gentleman named *Raftor*, and was born in the north of Ireland, in 1711. When young, she was married to Mr Richard Clive, a barrister; but the union was unfortunate, and, a separation taking place, she adopted the theatrical profession, in which she attained a distinguished rank. She filled and adorned a variety of comic parts; and whether she exhibited the woman of good sense, of real fine breeding, the humorous, the fantastic, the affected, the rude, the awkward, or the ridiculous female, in any rank of society, she was sure to fascinate the audience; though her talents were peculiarly adapted to scenes of low life. Her lively, playful humour is exemplified by the following theatrical anecdote:—She performed at Drury lane theatre under the management of Garrick. One night, while playing the lady in Lethe, Mrs Clive, in turning her head towards the stage-box, chanced to encounter the eye of Charles Townshend. That political wit pointed instantly to an old belle on his left, a very caricature of the ridiculous dame she was portraying on the stage. The actress paused for a moment, and burst into laughter. The galleries caught the jest, and joined boisterously in the mirth, clapping loudly with their hands at the same time. Mrs Clive at length retired from the stage, of which she had been long a distinguished ornament, and passed the latter part of her life at Little Strawberry hill, near the Gothic villa of Horace Walpole, who, as well as many other persons of rank and eminence, courted her society, attracted by the wit and drollery with which she enlivened her domestic circle. Her death occurred in 1785.

CLIVE, Robert, lord Clive and baron of Plassey, was born in 1725, in Shropshire. He was sent to several schools, but to little purpose, and was said, by all his masters, to be the most unlucky boy in their schools. His father obtained for him the place of a writer in the East India company's service, and, in his nineteenth year, he went in that capacity to Madras. In 1747, he quitted the civil employment, and entered into the military service, for which nature had so peculiarly fitted him. During two years, public events gave him little opportunity to distinguish himself; but, when the British thought proper to engage as auxiliaries, in favour of a competitor to the reigning rajah of Tanjore, it was resolved to attack one of his forts named *Devi Cotah*, in which service Clive acted with great bravery, and was soon after appointed commissary to the British troops. About this time, M. Dupleix, taking part with a candidate for the subahship of the Carnatic, succeeded in placing him on the throne, on condition of raising Chundasaheb to the nabobship of Arcot. By this proceeding, he gained a large grant of territory for the French, and the collection of all the revenues in that quarter of the Hindoo empire. The ostentation and insolence with which they afterwards conducted themselves roused the indignation of the British, a body of whom, under the command of Clive, made an attack upon the city of Arcot, the boldness of which measure caused it to succeed; and, after a most complete victory, he returned to Madras, and in 1753, sailed to England for the recovery of his health. A diamond hilted sword was voted to him by the East India company, which he only accepted upon condition that colonel Laurence, who had similarly distinguished himself in the action, should receive a like present. He was also presented with the government of St. David's with the right of succession to that of Madras, and a lieutenant-colonel's commission in the king's service. After a successful attack on the pirate Angria, in conjunction with admirals Pocock and Watson, he repaired to St David's, but was soon called to Madras, to command the succours sent to Bengal, where the nabob Surajah Dowlah had attacked the British, destroyed their factories, taken Calcutta, and suffocated several of his prisoners in the black hole. Colonel Clive proceeded to Calcutta, and, driving out the enemy, took possession of the city, and, with a very inferior number of men, entered the nabob's camp, and seized his cannon; which alarmed him so much, that he offered terms which were adjusted much to the advantage of the company. The state of things rendering it impossible for this peace to last long, colonel Clive formed the project of dethroning the nabob, the execution of which was confided to Mr Watts and himself; and one of the nabob's officers, named *Meer Jaffier*, joined them on condition of succeeding to his master's dignity. A Gentoo merchant named *Omichund*, was engaged to carry on the correspondence between Jaffier and the British; but, demanding a high sum for his services, a double treaty was drawn up, in one of which his demand was inserted, and both were signed; and the first only shown to Omichund, who, trusting to the faith of the British performed his part. The nabob, suspecting what was going forward, commanded Meer Jaffier to swear fidelity and join his army; and the famous battle of Plassey ensued, in which by comparatively a small body of troops, the nabob and his army were put to flight and the company's success decided. To the deep disgrace of Colonel Clive and the British, on the affair being decided, Omichund was informed that "the red paper was a trick, and he was to have nothing." The disappointment drove him mad, and, a year and a half after, he died in a state of idiocy. It should also be noticed, that the signature of admiral Watson, who was too honest to sign the paper, was a forgery. The new nabob Meer Jaffier who had come over at the close of the action, and had presented Clive with £1,290,000, now wished to govern without the interference of the British; but, three rebellions rising against him, he was obliged to solicit their aid, and Colonel Clive suppressed two, but made a compromise with the third competitor, whom he thought would be a check upon the nabob's becoming too powerful. He was next appointed governor of Calcutta; and soon after, a large force arrived at Bengal, on pretence of being sent to reinforce the garrisons belonging to the Dutch company. Suspecting that they were invited by the nabob, to destroy the British power, he attacked them, both by sea and land, with great success, capturing all their forces, and drawing up a treaty, signed by the Dutch, who agreed to pay all expenses, on the restitution of their property. For these services, he was created, by the great Mogul, an omrah of the empire, and received a grant of a revenue, amounting to £28,000 per annum from Meer Jaffier. He then again returned to England, where

his success was much applauded without much inquiry as to the means; and, in 1761, he was raised to the Irish peerage, by the title of *lord Clive, baron of Plassey*. He had not, however, been long in England before a disagreement took place between Meer Jaffier and Mr Holwell, who then officiated as governor, which ended in transferring the nabobship from the former to his son-in-law Cossim-Ally-Khan; but in consequence of the shameful monopolies and usurpations of the British traders, the new nabob declared the trade of the country free for all. It was in consequence, resolved to depose him, and restore Meer Jaffier; and, after a temporary success, he was obliged to take refuge with the nabob of Oude. On the news of these commotions reaching Great Britain, the company appointed lord Clive president of Bengal, with the command of the troops there, and in July, 1764, he returned to India, being first created a knight of the Bath. Before his arrival, major Adams had defeated the nabob of Oude, Sujah ul Dowlah, and obliged him to sue for peace; so that Lord Clive had only to settle terms of agreement with the country powers, which he did to the great advantage of the company, who acquired the disposal of all the revenues of Bengal, Bahar, and Orissa. In 1767, he finally returned to England, being the chief contributor to the immense possessions of the East India company. In 1773, a motion, supported by the minister, was made in the house of commons, "that, in the acquisition of his wealth, lord Clive had abused the powers with which he was intrusted." The charges brought forward in support of this motion had a very serious aspect, but, with the assistance of Mr Wedderburne, he made such a defence, that it was rejected, and a resolution passed, "that lord Clive had rendered great and meritorious services to his country," which, however, was no contradiction to the motion. From that time, his broken health, and probably his injured peace of mind, rendered him a prey to the most gloomy depression of spirits, under the morbid influence of which he put an end to his life and sufferings, at the age of fifty, in November, 1774.

A physiognomist would scarcely have been favourable to lord Clive, who possessed a remarkably heavy brow, which gave a close and sullen expression to his features; and he was, indeed, of a reserved temper, and very silent; nevertheless, among his intimate friends, he could be lively and pleasant. He was always self-directed, and secret in his decisions, but inspired those under his command with the utmost confidence, owing to his great bravery and presence of mind. Lord Chatham characterized him as a "heaven-born general, who, without experience, surpassed all the officers of his time." His talents, in fact, were as great as his political morality was disputable; and, as in the case of Warren Hastings, the services done to his country have paralyzed the disposition to investigate too nicely into the character of them. He was a member of parliament from 1760 to his death, but seldom spoke; though, when roused, he could display great eloquence. In private life, he was kind and exceedingly liberal. He married the sister of the late astronomer-royal, doctor Maskelyne, by whom he had two sons and three daughters.

CLOACÆ; subterranean works in Rome, of stupendous size and strength, constructed in the time of the Tarquins, for conducting off the overflowings of the Tiber, the waters from the hill, and the filth of the city. The *cloaca maxima*, or principal branch, received numerous other branches, between the Capitoline, Palatine and Quirinal hills. It has stood 2500 years, surviving the earthquakes which have shaken down the palaces, churches, and towers of the superincumbent city, and still stands as firmly as on the day of its foundation. It is formed of three concentric rows of enormous stones, piled above each other without cement. The height, inside, is 18 Roman palms, and the width about the same.

CLOCK. For many inventions which do honour to the human mind, we are indebted to the monks of the middle ages, who, in their seclusion, free from the necessity of providing for their support, employed the time during which they were not engaged in their devotions in the practice of various arts, both useful and useless. Among the inventions which we owe to them are clocks, or time-keepers, which are set in motion by wheels, pendulums, and steel springs. The word *horologium* was in use, even among the ancients; and it might almost be inferred, from many expressions, that they possessed instruments similar to our pocket watches and chamber clocks. It is, however, certain, that their time-pieces were sun-dials, hour-glasses, and clepsydræ. The latter Julius Cæsar brought with him from Great Britain. It was a clepsydra which Cassiodorus, in the sixth century, recommended to his monks, when a cloudy sky prevented them from observing their sun-dials. The gourmand Trimalchio, described by Petronius, had a clepsydra in his dining-room, and placed a trumpeter near it to announce the hours. Vitruvius mentions an Alexandrian artist, who, 140 years before our era, combined spring-wheels with the clepsydra; but the account is too confused and incomplete to afford a correct idea of its construction. In an old chronicle, it is related that Charlemagne received a clock (see *Automata*) from Haroun al Raschid in 809, to which small bells were attached, and in which figures of horsemen, at the hour of twelve, came forth through little doors, and retired again. There is a more exact description of this work of art in the Franconian annals, attributed to Eginhard, in which it is particularly said to have been a clepsydra, and that, at the end of each hour, little balls of metal fell upon a bell, and produced a sound. It is not probable that the clock which Pacificus, arch-deacon of Verona, is said to have invented in the ninth century, could have been equal to our present clocks. The words on his tomb are so indistinct that nothing positive can be inferred from them. The discovery of clocks has likewise been attributed to the famous Gerbert of Auvergne, who afterwards became pope under the name of *Sylvester II.*, and died in 1003; but Ditmar of Merseburg, a trustworthy witness, only relates that Gerbert placed a *horologium* in Magdeburg for the emperor Otho, after observing, through a tube, the star which guides the seamen. This must have been a sun-dial, which Gerbert placed according to the height of the pole. In the twelfth century, clocks were made use of in the monasteries, which announced the end of every hour by the sound of a bell, put in motion by means of wheels. From this time forward, the expression, "the clock has struck," is often met with. The hand for marking the time is also made mention of. Of William, abbot of Hirschau, his biographer relates, that he invented a *horologium* similar to the celestial hemisphere. Short as this account is, it still appears probable that this abbot was the inventor of clocks, as he employed a person particularly in arranging his work, and keeping it in order. This abbot died at the end of the eleventh century. In the 13th century, there is again mention of a clock, given by the sultan Saladin to the emperor Frederic II. This was evidently put in motion by weights and wheels. It not only marked the hours, but also the course of the sun, of the moon and the planets in the zodiac. It is hardly probable that the Saracens learned the art of clock-making from the

monks of European monasteries; perhaps on the contrary, they were the real inventors of it, and the invention was made known to Europeans by means of the crusades. In the 14th century, there are stronger traces of the present system of clock-work. Dante particularly mentions clocks. Richard, abbot of St Alban's in England, made a clock, in 1326, such as had never been heard of till then. It not only indicated the course of the sun and moon, but also the ebb and flood tide. Large clocks on steeples, likewise, were first made use of in the 14th century. Perhaps Jac. Dondi, in Padua, was the first who made one of this kind; at least his family was called, after him, *Dell' Orologio*. A German, Henry de Wyck, was celebrated, in the same century, for a large clock which he placed in a tower built by command of Charles V., king of France. This clock was preserved till 1737.

Watches are a much later invention, although they have likewise been said to have been invented as early as the 14th century. The general opinion is, that Peter Hele first contrived them in 1510. One of their names was that of *Nuremberg eggs* (*Nurnberger Eier*). According to some accounts, the first trust-worthy indications of their existence are found at the commencement of the 17th century. Galileo discovered the isochronism of the pendulum from observing the equal-timed vibrations of a lamp suspended from the ceiling of a church, and the simple pendulum was used by him as well as other astronomers of that day, as a measure of time in their observations of the heavenly bodies. Huygens was undoubtedly the first who applied the pendulum to clock-work, and the honour of being the inventor of the balance-spring in watches was contested between him and the English philosopher doctor Hooke. To prevent friction, Facio, a Genevan, invented the method of boring holes in diamonds or rubies for the pivots to revolve in, which was found a great improvement. Thus chronometers had their origin, in which the English have attained great perfection. This nation also invented repeaters. An individual of the name of Barlow first made one, in 1676, for king Charles II.; and Graham was the inventor of the compensation-pendulum (q. v.), in 1715. This was perfected by Harrison, who formed the pendulum of nine round rods, five of which were of iron and four of brass. With these pendulums the astronomical clocks are still provided, and perfect dependence may be placed in the regularity of their action. Amongst the important inventions of the 18th century, the astronomical clocks of the clergyman Hahn, in Echterdingen, Wurtemberg, deserve to be particularly named. See *Hahn*. He formed the idea of measuring time in its whole extent. The principal hand in his instrument is that of universal history. This turns on a table, and indicates the principal epochs of history, according to the chronology of the Old Testament, and the great events of future times, according to the calculations of Bengel, founded on the Apocalypse. Its revolution embraces a period of nearly 8000 years. Another hand on this table marks the year of the century, and makes its circuit in 100 years. Still more remarkable is the representation of the motions of the planets known at the time of the inventor, and of the systems of Ptolemy and Copernicus. They and their satellites perform their revolutions in exactly the same time as they actually do in the heavens; and these automata not only have the central motion, but their course is also eccentrical and elliptic, like that of the heavenly orbs, and the motion is sometimes slower, sometimes quicker, and even retrograde. This instrument must have been the fruit of deep knowledge, indefatigable research, and the calculations of years. It is much to be regretted, that the limited means of the artist prevented his machine from being better finished, and that he was not acquainted with clock-making in its present advanced state, and with the excellent instruments which have been invented since his time. The country where watches are manufactured in the greatest numbers is French Switzerland, particularly at Geneva, La-Chaux-de-Fonds, Locle, &c., where they are made by thousands. Among French watch-makers, Berthoud, Breguet, Chevalier, Courvoisier, Preu-d'homme, and others, are distinguished. Britain and France have been active in perfecting the art of horology. The elegant Parisian pendulum-clocks are well known, in which the art of the sculptor is combined with that of the machinist. Elegance, however, is their principal recommendation. It is much to be regretted, that the present watches, even the finest, have not the finish which gave such great durability to those of former times. This is particularly the case with French watches. We speak now of the better sort of watches; the ordinary ones are hardly worth the trifling sum which they cost. Wooden clocks are made chiefly in the Schwarzwald, or Black Forest, in South Germany, and furnish an important object of manufacture for this mountainous and barren country. It is said that 70,000 of such clocks are made there annually. Perhaps this account is exaggerated, but great numbers of the clocks are sent to North and South America, and all over Europe. The chief magazine of them is at Neustadt, in Baden.

CLOCK-WORK. It is usual with writers on clock-work to consider the moving part, or that which measures the time, as independent of the striking department of a common clock; the first being called the *watch*, and the second the clock department. This method we shall follow, as it tends greatly to the simplification of the subject. (An end view of the watch movement of a common clock is shown, fig. 1, plate XV.) The work-wheel is contained within two brass plates, SS.TT, connected together by four pillars, two of which are seen in the drawing. Between these two plates a barrel C is placed, moving on the pivots *b b* entering the plates, and which terminate the axis *a, a*. A catgut band passes round the barrel, being guided in winding by a spiral groove cut on the circumference. To the end of this catgut band, or cord, a weight P is attached, which, descending by its own weight, will uncoil the cord, and cause the barrel to turn on its axis; and were no obstruction offered, this motion would continue until the catgut were exhausted or the weight reached the ground. This, however, is prevented by the action of a click fixed to the wheel DD, which click strikes against the right sides of the teeth of a ratchet wheel attached to the barrel. The teeth of the wheel DD act upon the leaves of the pinion turning upon the pivots *c, c*. The wheel EE is fixed upon the axis of the pinion *d*, and thus the motion given to that pinion by the wheel DD, is transferred to the wheel EE, from thence to the pinion *e*, and afterwards to the wheel FF, which again gives motion to the pinion *f*, upon the axis of which is fixed the swing-wheel GH. The swing-wheel, as will be seen in fig. 2, has teeth of the ratchet form, in which the pallets IR play. These pallets are connected by a cross piece, as seen in the drawing, which is fastened to an arbor going through the back plate of the frame, as seen in fig. 1, and carrying the lever XU, which has a forked end, to receive the pendulum. To the brass bar A screwed to the frame of the clock, there is attached a small steel spring *y* by which the pendulum is suspended. The pendulum consists of a slender rod, with a heavy bob at the

one end, being suspended at the other. The length of time which the pendulum takes to vibrate will depend on its length, that is, on the distance between the centre of suspension and the centre of gravity of the bob.

On the laws of the motion of pendulums, such remarks shall only be made here as are necessary for the illustration of the movement of clock-work. The length of a pendulum vibrating seconds at London has been found to be 39·1393 inches. This pendulum, although vibrating seconds at London, would not do so correctly in other latitudes, for it has been found by experiment, and may be demonstrated from the known laws of gravity, that the length of the seconds' pendulum, increases by a certain rate, as we advance from the equator to the poles, the length at the equator being 39, and at the poles 39·206 inches. The latitude of the place where the clock is meant to go must therefore be taken into consideration by the maker, and the length of the pendulum regulated accordingly. The pendulum may be made to vibrate half-seconds, seconds, or two seconds, and the number of the teeth in the wheels made to correspond; but when a choice can be made, experience proves that preference ought to be given to a long pendulum. On this subject more shall be said towards the end of this article; meantime we return to the examination of the connexion of the pendulum with the swing-wheel.—When the pendulum *y* B, fig. 1, is drawn a little aside from the perpendicular, and then let go, it will move backwards and forwards, the bob B describing the arc of a circle round the centre of suspension *y*; and from the connexion before pointed out between the pendulum and the pallets, IR, fig. 2, it is easy to see that when, by the action of the weight P, motion is, as shown before, transmitted to the wheel GH, a tooth, H, of this wheel will act upon the pallet R, move it, and cause that tooth to escape. The motion of the pendulum will then cause the pallet I to come into contact with the tooth G, which again will escape, and so on, each tooth in the wheel escaping the pallets.—This department of the clock is denominated the escapement. Various forms of the escapement have been employed at different times, many of which exhibit great ingenuity; that which we have just described is the one in common use; it is very simple, and answers all ordinary purposes sufficiently well. In tracing the times of the revolutions of the wheels, we refer to fig. 1, where the wheel EE revolves once in an hour. The pivot *c* of this wheel passes through the plate, and is continued to *r*, upon which the minute hand is fixed. This extremity *r*, which carries the minute hand, is the end of a long socket fastened into the centre of the wheel NN, the teeth of which act upon the wheel O, whose pinion *p* moves the wheel *gg* fixed upon the socket which turns with the wheel N. The hour hand is fixed upon the barrel of the wheel *gg*, which of course turns once round in twelve hours.

From this description, the reader will perceive that the whole of the wheels, as likewise the pendulum, are kept in motion by the descending of the weight P, until the cord which is coiled round the barrel has been run out. The clock is again wound up by means of a key which fits on the square end of the arbor Q.

For the purpose of winding the clock, the click *c*, fig. 2, is moved by the inclined side of the teeth of the ratchet wheel K, which turns with the barrel, while the wheel D is at rest, but it continues to move so soon as the cord is coiled upon the barrel—the click falls and checks the teeth, thus allowing the wheel D to move, the click being kept in the teeth of the wheel by means of the spring A. If the pendulum of the clock be a seconds' pendulum, it will make 3600 vibrations in an hour; but a half seconds' pendulum, whose length is about $9\frac{11}{12}$ inches long, will make double that number, *i. e.* 7200 vibrations in an hour; and, supposing the latter to be employed, it then follows that, since the teeth of the swing-wheel GH must all act on each of the pallets, each tooth causing one vibration of the pendulum, if the swing-wheel have 30 teeth, the pendulum will make 60 vibrations during one of its revolutions. Hence since 60 is contained in 7200 120 times, the wheel GH will turn 120 times in an hour. If the wheel E have 72 teeth, and the pinion 6, then will the pinion revolve 12 times for one revolution of the wheel. The pinion C turns the wheel F which has 60 teeth, and the pinion e making ten revolutions for one of the wheel F, makes 120, while E performs one. The pinion *f* moves GH, causing it to turn round and make the pendulum vibrate 60 times for every revolution; and as the pinion *f* turns the wheel G, the pendulum must make 60 × 120 or 7200 vibrations, while the wheel E makes one turn. This last wheel, then, turns once in an hour. The wheel N on the same axis must likewise turn in one hour, and the minute hand is fixed upon a tube on the axis of this wheel. This is fixed on pretty tight, so that the hand, being carried round by friction, may be moved so as to be set at any figure on the dial plate without affecting any of the wheels. The wheel N having 30 teeth, drives the wheel O, having the same number, which therefore revolves in an hour. O carries the pinion P of six leaves, acting upon the wheel *gg* of 72 teeth; and the pinion will therefore make twelve turns for one of the wheel *gg*, which must take twelve hours to revolve, and upon the axis of this accordingly the hour hand is fixed.

We have hitherto confined our attention to the going or watch part of the clock, we will now endeavour to explain the construction of the striking department. The prime mover of the striking department, is a weight, attached to a cord wound round a barrel, in fig. 2, similar to the barrel in the clock department. The wheel *h*, on this barrel, turns a pinion of eight leaves, fixed on the same arbor as the wheel *i*, which again turns a pinion of eight leaves, on the arbor of the wheel *k*, of 48 teeth. On the same arbor with the wheel *t* of 48 teeth, there is fixed a pinion driven by the wheel *k*, and the wheel *t* again drives another pinion of six leaves, on whose axis a broad flat piece of metal S is fixed, called the fly, which, in revolving, strikes the air, and the resistance thence arising retards the motion of the train. Eight pins project from the side of *i*, which, as the wheel turns round, act in succession on the tail of the hammer, causing it to move out from the bell. When a pin leaves the tail of the hammer, it is returned, and made to strike the bell *x*, by the action of the spring *z*. But to prevent the hammer from continuing to press upon the bell, and thus deaden the sound, a small spring, *u*, acts upon the hammer, just before it strikes the bell, and lifts it after it has struck. The pin-wheel *i*, carries a pinion of eight leaves, driven by the wheel *k*, of 78 teeth, turning once in twelve hours. On the arbor of the wheel *k*, which passes through the brass plate SS, is fixed a small pinion of one tooth, called the gathering pallet seen at *r*, fig. 3. The gathering pallet, which revolves once for each stroke of the hammer, turns a larger wheel, a segment of which is seen at *s*; this wheel is called the rack, and to it is attached the arm *b*, whose end rests upon the spiral plate *v*, called the snail, fixed on the same tubular arbor as the wheel 72, and the hour hand. The snail is divided into 12 parts or steps, each of which corresponds to an hour; their circumferences are parts

of circles struck to different radii, decreasing in a certain proportion each step, the length of each being one-twelfth part of the circumference of the circle on which it is struck. These circular arcs form so many slips, constituting the snail, against which the arm *b* of the rack is pressed by the spring *w*, which is opposed by the hawk's-bill *g*, a click acting on the teeth of the rack; *bk* is the warning-piece, being a three-armed detant, one arm of which is bent at the end, and passes through the plate SS, in order to catch a pin fixed in the arm of the wheel *t* (fig. 2). The other arm *b* takes a direction so as to meet a pin on the wheel O. In fig. 3, the parts are represented as in motion, and the motion would continue were it not that, at each stroke of the hammer, the gathering pallet *r*, lifts the rack one tooth each turn —the hawk's-bill retaining the rack until a pin in the end of the rack is brought in the way of the gathering pallet lever, and thus stops the motion of the wheels. At the end of every hour the pin in the wheel O touches the end *b*, moving it towards the spring, thus lowering the end *k* to the circle of motion of the pin in the wheel *t* (fig. 2). The end of the hawk's-bill is at the same time lowered, by the end of the short tail, in consequence of which, the other end *g* is raised so as to clear the head of the rack S, when the rack is thrown back by the spring *w*, until the end of the arm A is pressed against the snail. The wheels are set in motion by the weight, when, by the falling back of the rack, the pin in it clears the gathering pallets; but a few minutes before the striking of the bell, the whole is stopped by the pin in the wheel *t*, falling against the end *k*. The motion of the wheels during this action produces that noise called the warning of the clock. When the hammer is about to strike, at the end of the hour, the end of the arm *b*, of the wheel O, slips over its pin, and it is raised against the end *k* by a small spring. The hammer *p* is raised by the pin-wheel *i*, and the bell is struck. The gathering pallet takes up a tooth of the rack each turn, the hawk's-bill retaining it until the pin of the rack comes under the gathering pallet, and checks the motion of the striking department until the next hour. The number of teeth that the rack falls back will depend upon the number of strokes made by the hammer, and, from the form of the snail, the rack falls back differently every hour, the hammer making one additional stroke each hour, from one to twelve. If, by any cord or other communication, the arm *b* should be moved between any two hours, then will the striking part be put into motion, and the arm A remaining in the step of the snail, the last hour will be struck, which is called repeating.

From this description it is easy to see that a clock may be made to go for any length of time without winding up, by increasing the number of teeth in the wheels, or, what comes to the same end, diminishing the number of hours in the pinions. The same may also be effected either by lengthening the cord to which the weight is attached, or by increasing the number of wheels and pinions. The moving power in clocks with short pendulums, called time-pieces, is frequently not a weight, as is above described, but a spring, such as that employed in watches, for a description of which apparatus, see *Watch-work*. Many other appendages and peculiarities in the construction of escapements and other parts of clocks, might have been described, but such minute detail would be totally inconsistent with the nature of a Popular Encyclopedia. We cannot, however, conclude this article without a more particular description of the pendulum, on which depends the regularity of the clock's motion. A heavy body *p*, (fig. 4,) attached to the end of a cord or slender rod PC, capable of moving round the centre C, forms the common pendulum. The body or bob P, will, if undisturbed, remain in the lower point A of the arch PE, but if drawn to one side, as shown in the figure, and then let go, it will, by the action of gravity, have a tendency to fall to the centre of the earth, in the direction of PL, but because of the rod or cord PC, it describes the arc PA, being part of a circle of which C is the centre. When the bob has reached the lowest point A, it has acquired such velocity as to carry it on to the point E, from which it descends and rises again towards A. These alternate motions backwards and forwards continue; but by reason of friction, and the resistance of the air, the length of the arcs described by the bob will continually decrease, until the action of gravity causes the pendulum to cease its motion altogether. We have already seen how the stopping of the pendulum is prevented, from a new impulse being given at every vibration by the action of the teeth of the swing-wheel upon the pallets. It may be demonstrated that if two pendulums describe similar arcs, the times of their vibrations are as the square roots of the lengths of the pendulums, and also that the lengths of pendulums are as the squares of the number of their vibrations in equal times, or as the squares of the times of vibration. Wherefore, since the length of a seconds' pendulum at London, has been found to be 39·1386 inches (which will answer sufficiently well for all places in Britain), it follows, from the foregoing statement, that the length of a half seconds' pendulum will be about 9·8, and a quarter seconds' about 2·45 inches. The bob may be dispensed with, and a simple rod BG (fig. 5) employed, whose length is greater, by one third, than the length of the pendulum with the bob.

We have before alluded to the effect of gravity, in causing a difference in the time of vibration of the same pendulum in different latitudes, a circumstance which will be fully considered in the article *Pendulum* (q. v.); but there is another circumstance affecting the time of vibration of a pendulum which we must here consider, we mean the effect of heat and cold, in lengthening and shortening the pendulum; so that the time of the going of a clock is influenced by variations of temperature. This circumstance for a long time rendered the clock a very unsafe guide to the navigator, in determining the *longitude* (q. v.), and accordingly several contrivances have been made to remedy this defect. Many of these are exceedingly ingenious, but our limits will only permit us to notice three. These pendulums are called compensation pendulums, because they contain within themselves means of compensating for variations in length caused by the differences of temperature. The first we shall notice is the mercurial pendulum of Graham, invented about 1721, which is exceedingly simple, and serves well to illustrate the principle upon which compensation pendulums are constructed. Graham's pendulum consists of a steel rod, at the end of which is fixed a glass jar containing mercury; so that when the rod expands by heat, the jar is lowered, while at the same time the heat expands the mercury, and thus the centre of oscillation is raised, and the one expansion counteracting and compensating for the other, the length of the pendulum remains unchanged. This contrivance, though simple and ingenious, is in little use, being exceedingly difficult of adjustment. The gridiron pendulum of Harrison consists of five, seven, nine, or any odd number of rods of different metals which effect compensation in a manner that will be understood by reference to the pendulum represented in fig. 6. The two outer rods A B, C D, are of steel, fastened by means of pins to the cross pieces A C, B D.

The rods E F, G H are of brass, and fastened in a similar way to the lower bar B D, and to E G the second bar from the top. The two next rods are of steel, and fastened to the cross bars I K and E G. The next two are fastened to the cross bar L M and I K, and are of brass. The central rod to which the bob is attached is made of steel, and fastened to the cross piece L M, and passes freely through the cross pieces B D, I K. The effect of the steel rods is to lengthen the pendulum, on expansion by heat, or to shorten it on contraction by cold; while this is compensated by the contra expansion and contraction of the rods of brass in the following manner:—When, by increase of temperature, the two outer steel rods expand, the cross bar B D, together with the rods attached to it, will descend, and thus the pendulum will be lengthened; but the two next brass rods fastened in B D will also expand and raise the cross piece E G, whereby the next two rods of steel, will likewise be raised. These two last mentioned rods will also expand, and therefore the cross piece I K will be lowered. To this cross piece the two next rods of brass are fastened, and they will likewise expand and raise the cross piece L M, which elevation will compensate for the depression of the bob, by the expansion of the centre rod.—This description of pendulum answers the purpose of keeping correct time exceedingly well, and is accordingly employed in chronometers for navigators, and the clocks of observatories. The last form of the compensation pendulum which we shall notice is that of Crosthwaite. A and B are two rods made of steel similar to each other in every respect, the rod B being supported by a bracket D, and the top formed into a gibbet at C. The rod B is firmly fixed into a large piece of marble. F set into a wall so adjusted that the rod may be moved up or down between the brass staples 1, 2, 3, 4, which touch only in a point in front and behind. The rod A carries at its lower extremity the bob G, twenty-four pounds' weight, the upper end being suspended by a spring at the gibbet C. All this apparatus is unconnected with the clock, to the back of the plate of which at K two cheeks are secured in a line with the verge L. The maintaining power is applied in the usual way of regulators at M, by means of a cylindrical stud, and here the compensation, if so it can be called, takes place. For while the rod B expands, A must raise the upper end C, the lower end being immovable, but its expansion will be accompanied with a similar expansion of the rod A, which will lower the bob. It is to be observed that the top of the rod A, is attached to the gibbet by means of two slender chains which pass through between two brass plates, whose lower edges will form the centre of suspension of the pendulum. This pendulum, though much more simple, is not so invariable as a well constructed pendulum of the gridiron construction. See Reid on Clock and Watch Work, a volume published at Edinburgh.

CLOISTER. See *Monastery*.

CLOOTS, John Baptist von; a Prussian baron, during the revolutionary scenes in France, under the appellation of *Anacharsis Cloots*. He was born at Cleves, in 1755, and became possessed of a considerable fortune, which he partly dissipated through misconduct. The example of his uncle, Cornelius Pauw, who published several popular works, inspired him with an inclination to become an author. He travelled in different parts of Europe, and formed an acquaintance with many eminent individuals, among whom was the celebrated Edmund Burke; but the politics of that statesman did not suit the irregular and ardent disposition of Cloots, to whom the French revolution at length opened a career which he thought worthy of his ambition. The first scene in which he distinguished himself was the ridiculous masquerade called the *embassy of the human race*, partly contrived by the duke de Liancourt. On the 19th of June, 1790, Cloots presented himself at the bar of the national assembly, followed by a considerable number of the porters of the French metropolis, in foreign dresses, to represent the deputies of all nations. He described himself as the orator of the human race, and demanded the right of confederation, which was granted him. At the bar of the assembly, April 21, 1792, he made a strange speech, in which he recommended a declaration of war against the king of Hungary and Bohemia, proposed that the assembly should form itself into a diet during a year, and finished by offering a patriotic gift of 12,000 livres. On the 12th of August, he went to congratulate the legislative assembly on the occurrences of the preceding 10th, and offered to raise a Prussian legion, to be called the *Vandal legion*. The 27th of the same month, he advised the assembly to set a price on the heads of the king of Prussia and the duke of Brunswick, praised the action of John J. Ankarstrœm, the assassin of the king of Sweden, and, among other absurd expressions, he said, "My heart is French, and my soul is *sans-culotte*." He displayed no less hatred to Christianity than to royalty, declaring himself the "personal enemy of Jesus Christ." In September, 1792, he was nominated deputy from the department of the Oise to the national convention, in which he voted for the death of Louis XVI. "in the name of the human race." This madman, becoming an object of suspicion to Robespierre and his party, was arrested, and condemned to death, March 24, 1794. He suffered with several others, and, on his way to the guillotine, he discoursed to his companions on materialism and the contempt of death. On the scaffold, he begged the executioner to decapitate him the last, that he might have an opportunity for making some observations essential to the establishment of certain principles while the heads of the others were falling.

CLOS, Choderlos de la (his entire name was *Pierre Ambroise François Ch. de la Clos*), well known for his extraordinary and dangerous novel, *Les Liaisons Dangereuses*, born at Amiens, in 1741, was an officer in the army, afterwards secretary and confidant of the duke of Orleans, whom he assisted in his plans during the revolution. In 1791, he entered the Jacobin club, and edited the journal *Ami de la Constitution*. He died, during the consular government, at Tarentum, in 1803, in the rank of general of brigade in the artillery in the army of Naples.

CLOSE-HAULED (*au plus pres*, in French), in navigation; the general arrangement or trim of a ship's sails, when she endeavours to make progress, in the nearest direction possible, towards that point of the compass from which the wind blows.

CLOSE-QUARTERS; certain strong barriers of wood, stretching across a merchant-ship in several places. They are used as a place of retreat when a ship is boarded by her adversary, and are therefore fitted with several small loopholes, through which to fire the small arms. They are likewise furnished with several small caissons, called *powder-chests*, which are fixed upon the deck, and filled with powder, old nails, &c., and may be fired at any time. Instances are known in which close-quarters have proved highly effective.

CLOTH. See *Cotton*, *Woollen*, *Silk*, &c.

CLOTHING. A very striking fact, exhibited by the bills of mortality, is the very large proportion of persons who die of consumption. It is not our intention to enter into any general remarks upon the nature of that fatal disease. In very many cases, the

origin of a consumption is an ordinary cold; and that cold is frequently taken through the want of a proper attention to clothing, particularly in females. We shall, therefore, offer a few general remarks upon this subject, so important to the health of all classes of persons.

Nothing is more necessary to a comfortable state of existence, than that the body should be kept in nearly a uniform temperature. The Almighty wisdom, which made the senses serve as instruments of pleasure for our gratification, and of pain for our protection, has rendered the feelings arising from excess or deficiency of heat so acute, that we instinctively seek shelter from the scorching heat and freezing cold. We bathe our limbs in the cool stream, or clothe our bodies with the warm fleece. We court the breeze, or carefully avoid it. But no efforts to mitigate the injurious effects of heat or cold would avail us, if nature had not furnished us, in common with other animals (in the peculiar functions of the skin, and lungs), with a power of preserving the heat of the body uniform under almost every variety of temperature to which the atmosphere is liable. The skin, by increase of the perspiration, carries off the excess of heat; the lungs, by decomposing the atmosphere, supply the loss; so that the internal parts of the body are preserved at a temperature of about 98° under all circumstances. In addition to the important share which the function of perspiration has in regulating the heat of the body, it serves the further purpose of an outlet to the constitution, by which it gets rid of matters that are no longer useful in its economy. The excretory function of the skin is of such paramount importance to health, that we ought, at all times, to direct our attention to the means of securing its being duly performed; for if the matters that ought to be thrown out of the body by the pores of the skin are retained, they invariably prove injurious. When speaking of the excrementitious matter of the skin, we do not mean the sensible moisture which is poured out in hot weather, or when the body is heated by exercise, but a matter which is too subtile for the senses to take cognizance of, which is continually passing off from every part of the body, and which has been called the *insensible perspiration*. This insensible perspiration is the true excretion of the skin. A suppression of the insensible perspiration is a prevailing symptom in almost all diseases. It is the sole cause of many fevers. Very many chronic diseases have no other cause. In warm weather, and particularly in hot climates, the functions of the skin being prodigiously increased, all the consequences of interrupting them are proportionably dangerous. Besides the function of perspiration, the skin has, in common with every other surface of the body, a process, by means of appropriate vessels, of absorbing, or taking up, and conveying into the blood-vessels, any thing that may be in contact with it. It is also the part on which the organ of feeling or touch is distributed. The skin is supplied with glands, which provide an oily matter, that renders it impervious to water, and thus secures the evaporation of the sensible perspiration. Were this oily matter deficient, the skin would become sodden, as is the case when it has been removed—a fact to be observed in the hands of washerwomen, when it is destroyed by the solvent powers of the soap. The hair serves as so many capillary tubes to conduct the perspired fluid from the skin. The three powers of the skin, perspiration, absorption, and feeling, are so dependent on each other, that it is impossible for one to be deranged without the other two being also disordered. For if a man be exposed to a frosty atmosphere, in a state of inactivity, or without sufficient clothing, till his limbs become stiff and his skin insensible, the vessels that excite the perspiration and the absorbent vessels partake of the torpor that has seized on the nerves of feeling; nor will they regain their lost activity till the sensibility be completely restored. The danger of suddenly attempting to restore sensibility to frozen parts is well known. If the addition of warmth be not very gradual, the vitality of the part will be destroyed. This consideration of the functions of the skin will at once point out the necessity of an especial attention, in a fickle climate, to the subject of clothing. Every one's experience must have shown him how extremely capricious the weather is in this country. Our experience of this great inconstancy in the temperature of the air ought to have instructed us how to secure ourselves from its effects. The chief end proposed by clothing ought to be protection from the cold; and it never can be too deeply impressed on the mind (especially of those who have the care of children), that a degree of cold amounting to shivering cannot be felt, under any circumstances, without injury to the health, and that the strongest constitution cannot resist the benumbing influence of a sensation of cold constantly present, even though it be so moderate as not to occasion immediate complaint, or to induce the sufferer to seek protection from it. This degree of cold often lays the foundation of the whole host of chronic diseases, foremost amongst which are found scrofula and consumption. Persons engaged in sedentary employments must be almost constantly under the influence of this degree of cold, unless the apartment in which they work is heated to a degree that subjects them, on leaving it, to all the dangers of a sudden transition, as it were, from summer to winter. The inactivity to which such persons are condemned, by weakening the body, renders it incapable of maintaining the degree of warmth necessary to comfort, without additional clothing or fire. Under such circumstances, a sufficient quantity of clothing, of a proper quality, with the apartment moderately warmed and well ventilated, ought to be preferred, for keeping up the requisite degree of warmth, to any means of heating the air of the room so much as to render any increase of clothing unnecessary. To heat the air of an apartment much above the ordinary temperature of the atmosphere, we must shut out the external air; the air also becomes extremely rarefied and dry; which circumstances make it doubly dangerous to pass from it to the cold, raw, external air. But in leaving a moderately well warmed room, if properly clothed, the change is not felt; and the full advantage of exercise is derived from any opportunity of taking it that may occur.

The only kind of dress that can afford the protection required by the changes of temperature to which high northern climates are liable, is *woollen*. Nor will it be of much avail that woollen be worn, unless *so much* of it be worn, and it be *so* worn, as effectually to keep out the cold. Those who would receive the advantage which the wearing of woollen is capable of affording, must wear it next the skin; for it is in this situation only that its health-preserving power can be felt. The great advantages of woollen cloth are briefly these:—the readiness with which it allows the escape of the matter of perspiration through its texture; its power of preserving the sensation of warmth to the skin under all circumstances; the difficulty there is in making it thoroughly wet; the slowness with which it conducts heat; the softness, lightness, and pliancy of its texture. *Cotton cloth*, though it differs but little from linen, approaches nearer to the nature of woollen, and, on that account, must be esteemed as the next best substance of which clothing may be made. *Silk* is the next in point of excellence, but it is very inferior to cotton

in every respect. *Linen* possesses the contrary of most of the properties enumerated as excellences in woollen. It retains the matter of perspiration in its texture, and speedily becomes imbued with it; it gives an unpleasant sensation of cold to the skin; it is very readily saturated with moisture, and it conducts heat too rapidly. It is, indeed, the worst of all the substances in use, being the least qualified to answer the purposes of clothing.

There are several prevailing errors in the mode of adapting clothes to the figure of the body, particularly amongst females. Clothes should be so made as to allow the body the full exercise of all its motions. The neglect of this precaution is productive of more mischief than is generally believed. The misery and suffering arising from it begin while we are yet in the cradle. When they have escaped from the nurses' hands, boys are left to nature. Girls have, for a while, the same chance as boys, in a freedom from bandages of all kinds; but, as they approach to womanhood, they are again put into trammels in the forms of stays. The bad consequences of the pressure of stays are not immediately obvious, but they are not the less certain on that account. The girl writhes and twists to avoid the pinching which must necessarily attend the commencement of wearing stays tightly laced. The posture in which she finds ease is the one in which she will constantly be, until, at last, she will not be comfortable in any other, even when she is freed from the pressure that originally obliged her to adopt it. In this way most of the deformities to which young people are subject originate, and, unfortunately, it is not often that they are perceived until they have become considerable, and have existed too long to admit of remedy.

CLOTILDE DE VALLON CHALIS, Marguerite Eleonore, born at Vallon, a castle on the Ardeche, in Languedoc, in 1405. The poems of this lady, which have been preserved, did not make their appearance till 1803. At the age of eleven, she translated a poem of Petrarch into verse. Fortunate circumstances, particularly her acquaintance with several distinguished female poets of her time, unfolded her poetical talents. In 1421, she married Berenger de Surville, a young knight, who was soon obliged to follow the dauphin (Charles VII.) to Puy-en-Velay. On the occasion of this separation, she composed a beautiful poem, which takes the first rank amongst her works. After being married seven years, she lost her husband, who fell before Orleans. After this she occupied her time with the education of young females possessed of poetical talent. Among these were Sophie de Lyonna and Juliette de Vivarez. By chance, she became acquainted with Margaret of Scotland, wife of the dauphin Louis. In consequence of a poem which she composed in praise of duke Philip the Good, Margaret sent her a crown of artificial laurel, with silver leaves, and interwoven with twelve golden flowers; but Clotilde would not listen to the pressing invitations which she received to appear at court. In 1495, she commemorated, in a poem, the triumphs of Charles VIII. The year of her death is not known. Her poems, which are distinguished for delicacy and grace, appear to have been lost, when one of her descendants, Joseph Etienne de Surville (who, in 1798, was shot as a secretly returned emigrant), a man himself possessed of a talent for poetry, on searching the archives of his family, discovered, in 1782, the hand-writing of Clotilde. With difficulty he deciphered the writing, studied the language, and soon found his pains richly rewarded. On his emigration, in 1791, he left the manuscript of Clotilde behind him, which, with many other family records, became a prey to the flames. The copies, which had been previously taken of several pieces, came from his widow into the hands of the present publisher, M. Vanderbourg. The genuineness of these poems is not to be doubted, although it is apparent that, in some instances, M. de Surville has ventured to make alterations.

CLOUD. The clouds are aqueous vapours, which hover at a considerable height above the surface of the earth. They differ from fogs only by their height and less degree of transparency. The cause of the latter circumstance is the thinness of the atmosphere in its higher regions, where the particles of vapour become condensed. The varieties of clouds are numerous. Some cast a shade which covers the sky, and, at times, produces a considerable darkness; others resemble a light veil, and permit the rays of the sun and moon to pass through them. Clouds originate like fogs. The watery evaporations which rise from seas, lakes, ponds, rivers, and, in fact, from the whole surface of the earth, ascend, on account of their elasticity and lightness, in the atmosphere, until the air becomes so cold and thin that they can rise no higher, but are condensed. Philosophers, however, are of very different opinions respecting the way in which the condensation and the whole formation of the clouds proceed. De Luc, whose theory is considered the most probable, believes that the water, after its ascent in the form of vapours, and before it takes the shape of clouds, exists in a gaseous state, not affecting the hygrometer, which is the reason why the air, in the higher regions, is always dry. He explains the clouds to be collections of small vesicles, in the transformation of which from the gaseous state, he believes that caloric operates, in part at least, because, according to his opinion, clouds communicate a degree of heat to the body which they render damp. According to Hube clouds are collections of precipitated bubbles, and differ by their negative electricity from fogs, the electricity of which is generally positive. If clouds and fogs lose their electricity, rain is produced. These explanations are, however, by no means perfectly satisfactory. More on this subject is to be found in Mayor's *Lehrbuch uber die Physische Astronomie, Theorie, der Erde und Meteorologie*, Gottingen, 1805.

The change of winds contributes essentially to the formation of clouds and fogs. In countries where this change is small and infrequent, as between the tropics, these phenomena of humidity in the atmosphere must be comparatively rare, but, when they happen, the more violent, because a great quantity of vapour has had time to collect. The distance of the clouds from the surface of the earth is very different. Thin and light clouds are higher than the highest mountains; thick and heavy clouds, on the contrary, touch low mountains, steeples, and even trees. The average height of the clouds is calculated to be two miles and a half. Their size is likewise very different. Some have been found occupying an extent of twenty square miles, and their thickness, in some cases, has been ascertained, by travellers, who have ascended mountains, to be a thousand feet: others are very thin, and of small dimensions.

The natural history of clouds, not as respects their chemical structure, but their forms, their application to meteorology, and a knowledge of the weather, has been well treated by Lucas Howard, in his Essay on Clouds. He distributes clouds into three essentially different formations. These formations are—1. *Cirrus*, consisting of fibres which diverge in all directions. See this represented in Plate XV. Fig. 1. 2. *Cumulus*, convex and conical aggregates, which increase from a horizontal basis upwards. See N° 2. of Plate XV. 3. *Stratus*, layers vastly extended, connec-

ted and horizontal. See N° 3. of Plate XV. Of these formations there are intermediate and compound modifications, namely, *Cirro-cumulus*, small, well-defined masses, in close arrangement (Plate XV. N° 4.)—*Cirro-stratus*, horizontal masses, bent downward or undulated, and separate or in groups (Plate XV. N° 5.)—*Cumulo-stratus*, or twain cloud, the cirro-stratus blended with the cumulus, and either appearing intermixed with the heaps of the latter, or superadding a wide-spread structure to its base. (Plate XV. N° 6.)—*Cumulo-cirro-stratus*, or *Nimbus*, the rain-cloud, a cloud or system of clouds from which rain is falling, above which the cirrus spreads, while the cumulus enters it laterally and from beneath (Plate XV. Nos. 7 and 8.)—The *Fall-Cloud*, resting apparently on the surface of the ground (Plate XV. N° 9).

The clouds are generally assigned to three atmospherical regions, the upper, the middle, and the lower one, to which a fourth, the lowest, may be added. · In the upper region, the atmosphere is in such a state, that it can receive and sustain aqueous matter dissolved into its integrant parts. This state of the atmosphere corresponds to the highest state of the barometer. To this region belongs the *cirrus*, which has the least density, but the greatest height, and variety of shape and direction. It is the first indication of serene and settled weather, and first shows itself in a few fibres, spreading through the atmosphere. These fibres by degrees increase in length, and new fibres attach themselves to the sides. The duration of the *cirrus* is uncertain, from a few minutes to several hours. It lasts longer, if it appears alone, and at a great height; a shorter time, if it forms in the neighbourhood of other clouds. The middle region is the seat of *cumulus*, which is generally the most condensed, and moves with the stream of air nearest to the earth. This region can receive much humidity, but not in perfect solution. The humidity becomes collected, and shows itself in masses rising conically, and resting on the third region. The appearance, increase, and disappearance of the *cumulus*, in fine weather, are often periodical, and correspondent to the degree of heat. Generally, it forms a few hours after sunrise, attains its highest degree in the hottest hours of the afternoon, and decreases and vanishes at sunset. Great masses of *cumulus*, during high winds, in the quarter of the heavens towards which the wind blows, indicate approaching calm and rain. If the *cumulus* does not disappear, but rises, a thunder-storm is to be expected during the night. If the upper region, with its drying power, predominates, the upper parts of the *cumulus* become *cirrus*. But, if the lower region predominates (into which the densest vapours are attracted and dissolved into drops), the basis of the *cumulus* sinks, and the cloud becomes *stratus*, which is of moderate density, and its lower surface rests generally upon the earth or the water. This is the proper evening cloud, and appears first towards sunset. To this belong also those creeping fogs, which, in calm evenings, ascend from the valleys, and extend themselves in undulating masses. The *stratus* remains quiet, and accumulates layers, till at last it falls as rain. This phenomenon—the dissolution of clouds into rain—is called *nimbus*. Th. Forster has followed Howard in his investigations respecting the clouds, and Goethe, the German poet, has made an application of this theory in his work entitled *Zur Naturwissenschaft*, vol. i.

CLOUD, St; a charmingly situated village, two leagues east from Paris, in the department of Seine-and-Oise, with a royal castle and magnificent garden, which were much embellished by Napoleon. On the 7th of September, and some days following, perhaps a sixth part of the population of Paris is assembled here, full of gayety, attending the fair, which affords a striking picture of a certain class of the French people. As the residence of the monarch of France, St Cloud is historically interesting. Many events in the civil disturbances of that country are connected with this place. Here Henry III. was murdered by Clement, Aug. 2, 1589; and, in modern times, it has been rendered famous by the revolution of the 18th of Brumaire, which destroyed the directory, and established the consular government. Napoleon chose St Cloud for his residence; hence the expression, *cabinet of St Cloud*. Under the former government, the phrase was *cabinet of Versailles*, or *cabinet of the Tuileries*. In 1814, St Cloud was besieged, March 31, by the van-guard of the army of the allies under Langeron. April 7, the head-quarters of the allied armies were there, and remained there until June 3. In 1815, Blucher had his head-quarters at St Cloud; and here also was concluded the military convention (July 3, 1815), by which Paris fell a second time into the hands of the allies. Bignon, Guilleminot and count Bondi acted on the part of France, general Muffling (the same who was, in 1829, a mediator between Russia and Turkey, at Constantinople, sent there by the king of Prussia) for Prussia, colonel Hervey for Britain. The dubious sense of several points determined in the convention afterwards occasioned mutual reproaches.

CLOVE. The clove is the unexpanded flower-bud of an East Indian tree (*caryophillus aromaticus*), somewhat resembling the laurel in its height, and in the shape of its leaves. The leaves are in pairs, oblong, large, spear-shaped, and of a bright-green colour. The flowers grow in clusters, which terminate the branches, and have the calyx divided into four small and pointed segments. The petals are small, rounded, and of a bluish colour; and the seed is an oval berry. In the Molucca islands, where the raising of different spices was formerly carried on by the Dutch colonists to great extent, the culture of the clove-tree was a very important pursuit. It has even been asserted, that, in order to secure a lucrative branch of commerce in this article to themselves, they destroyed all the trees growing in other islands, and confined the propagation of them to that of Ternate. But it appears that, in 1770 and 1772, both clove and nutmeg-trees were transplanted from the Moluccas into the islands of France and Bourbon, and subsequently into some of the colonies of South America, where they have since been cultivated with great success. At a certain season of the year, the clove-tree produces a vast profusion of flowers. When these have attained the length of about half an inch, the four points of the calyx being prominent and having, in the middle of them, the leaves of the petals folded over each other, and forming a small head about the size of a pea, they are in a fit state to be gathered. This operation is performed betwixt the months of October and February, partly by the hand, partly by hooks, and partly by beating the trees with bamboos. The cloves are either received on cloths spread beneath the trees, or are suffered to fall on the ground, the herbage having been previously cut and swept for that purpose. They are subsequently dried by exposure for a while to the smoke of wood fires, afterwards to the rays of the sun. When first gathered, they are of a reddish-colour, but, by drying, they assume a deep-brown cast. This spice yields a very fragrant odour, and has a bitterish, pungent, and warm taste. It is sometimes employed as a hot and stimulating medicine, but is more frequently used in culinary preparations. When fresh gathered, cloves will yield, on pressure, a fragrant, thick, and reddish oil; and, by distillation, a limpid essential oil. Oil of cloves is

used by many persons, though very improperly, for curing the tooth-ache; since, from its pungent quality, it is apt to corrode the gums and injure the adjacent teeth. When the tooth is carious, and will admit of it, a bruised clove is much to be preferred.

CLOVE BARK, or CULILAWAN BARK (*cortex lauri culilawan*) is furnished by a tree of the Molucca islands. It is in pieces more or less long, almost flat, thick, fibrous, covered with a white epidermis, of a reddish-yellow inside, of a nutmeg and clove odour, and of an aromatic and sharp taste. It is one of the substitutes for cinnamon, but not much used. We find also, in commerce, under the name of *clove bark*, another bark furnished by the *myrtus caryophillata* (Lin.). It is in sticks two feet long, formed of several pieces of very thin and hard bark, rolled up one over the other, of a deep brown colour, of a taste similar to that of cloves. It possesses the same properties as the former barks, and may be considered as a substitute for them.

CLOVER (*trifolium*). The clovers are a very numerous family. Some botanists reckon no less than fifty-five species belonging to the genus of which cultivated clovers are varieties. The following are most used:—1. *Pratense*, or common red clover. This is a biennial, and sometimes, especially on chalky soils, a triennial plant. This is the kind most commonly cultivated, as it yields a larger product than any of the other sorts. The soil best adapted for clover is a deep, sandy loam, which is favourable to its long tap-roots; but it will grow in any soil not too moist. So congenial is calcarious matter to clover, that the mere strewing of lime on some soils will call into action clover-seeds, which, it would appear, have lain dormant for ages. It is a recommendation of this grass, that it is adapted to a soil suitable to scarcely any other kind of grass—to land which is dry, light, sandy, or composed mostly of gravel. Clover-seed should be sowed in the spring, except in climates where there are no severe winter frosts. The young plants which come up in autumn cannot bear the frost so well as those which have had a whole summer to bring them to maturity. Spring wheat is a very good crop with which to sow clover and other grass-seed. It is recommended to sow the grass-seed, and plough or harrow it in with the wheat. If it be scattered on the surface without being well covered, a part does not vegetate, and that which does will be liable to injury from drought. Clover-seed may also be sown in the spring on winter grain, and harrowed in. European writers agree with American cultivators, that the harrowing will do no damage, but will be of service to the grain. The author of a valuable work, entitled a Treatise on Agriculture, lately published in America, directs ten or twelve pounds of clover-seed to be sown on an acre, if the soil be rich, and double that quantity if it be poor. He condemns the practice of mixing the seeds of timothy, rye, grass, &c., with that of clover, "because these grasses neither rise nor ripen at the same time." Another practice, equally bad (according to this writer), "is that of sowing clover-seed on winter grain before the earth has acquired a temperature favourable to vegetation, and when there can be no doubt but that two-thirds of the seeds will perish." Clover-seed of a bright yellow, with a good quantity of purple and brown-coloured seed amongst it, which shows its maturity, should be preferred. When perfectly ripe and well gathered, its power of vegetation will continue for four or five years. Two sorts of machines are described in the Transactions of the New York Agricultural Society for gathering clover-seed. One of these machines consists of an open box about four feet square at the bottom, and about three feet in height on three sides; to the fore part, which is open, fingers are fixed, about three feet in length, and so near as to break off the heads from the clover, stocks between them, which are thrown back as the box advances. The box is fixed on an axle-tree, supported by small wheels, with handles fixed to the hinder part, by which the driver, while managing the horse, raises or depresses the fingers of the machine, so as to take off the heads of the grass. The other machine called a *cradle*, is made of an oak board about eighteen inches in length and ten in breadth. The fore part of it, to the length of nine inches, is sawed into fingers; a handle is inserted behind, inclined towards them, and a cloth put round the back part of the board, which is cut somewhat circular and raised on the handle; this collects the heads or tops of the grass, and prevents them from scattering as they are struck off by the cradle, which may be made of different sizes,—being smaller in proportion for women and children, who, by means of it, may likewise collect large quantities.

2. *Trifolium repens*, or white clover. This also thrives best in light land. When sown by itself, it rarely grows tall enough to be well cut with a sithe. When mixed with timothy or green grass (*poa viridis*), it makes excellent hay. Clover requires much attention to make it into hay. Its stalks are so succulent, that the leaves, which are the best part, are apt to crumble and waste away before the hay is well dried. It has, therefore, been recommended to cart it to the mow or the stack before the stalks are dry, and either to put it up with alternate layers of hay and straw, or to salt it at the rate of from half a bushel to a whole bushel per ton. Green clover is good for swine. The late judge Peters, of Pennsylvania, observed, "In summer, my hogs chiefly run on clover. Swine feeding on clover in the fields will thrive wonderfully, when those (confined or not) fed on cut clover will fall away." (*Mem. Penn. Agr. Soc.* vol. ii. p. 33.)

CLOVIS, king of the Franks, born 465, succeeded his father Childeric in the year 481, as chief of the warlike tribe of Salian Franks, who inhabited a barren country between the sea and the Scheldt. This tribe at a former period, had made incursions into the neighbouring territories, but were driven back into their forests and morasses. Clovis, therefore, united with Ragnacaire, king of Cambray, and declared war upon Syagrius (son of Aetius), the Roman governor at Soissons. The Romans were entirely routed near Soissons, in 486. Syagrius fled to Toulouse, to the court of Alaric, king of the Goths, whose cowardly councillors delivered him up to Clovis, by whom he was put to death. Soissons now became the capital of the new kingdom of the Salian Franks. The uncultivated Clovis governed his new subjects with wisdom and moderation; he was particularly desirous to obtain the good-will of the clergy. All the cities in *Belgia Secunda* submitted to him. Paris yielded to the victor in 493, and, in 507, was selected for the capital of his kingdom. In order to obtain assistance in withstanding the powerful Visigoths in Gaul, Clovis married Clotilda, niece of Gundebald, king of Burgundy. This princess, who had been educated in the Catholic faith, was desirous that her husband, also, should embrace it. Her efforts were fruitless, till, on an occasion when he was hard pressed in a battle against the Allemanni, near Zulpich (496), Clovis called on the God of Clotilda and the Christians. Victory declared in his favour; and the part of the territory of the Allemanni lying on the Upper Rhine submitted to the king of the Franks. The victor's conversion was now an easy matter for the eloquent

St Remigius, archbishop of Rheims. Clovis was solemnly baptized at Rheims, December 25, 496, with several thousand Franks, men and women. St Remigius, at the same time, anointed him. The cities of Armorica (Bretagne) then submitted to his sceptre in 497. There now remained in Gaul only two independent powers besides the Franks, viz., the Burgundians and Visigoths. The former had two kings, Godegisele and Gundebald. Clovis made an attack upon the latter, whose territories extended from the Vosges to the Alps and the sea-coast of Marseilles. Gundebald, deserted by the faithless Godegisele, was routed near Dijon, compelled to surrender Lyons and Vienne to the victorious Clovis, and to flee to Avignon, where he concluded a peace. Clovis returned home loaded with spoils. Gundebald afterwards violated the treaty; but Clovis, fearing the Goths, entered into a new alliance with him. Hostilities soon broke out between Alaric king of the Goths, and Clovis. In the battle near Poictiers, between the rivers Vonne and Clouére, the latter gained a complete victory, slaying his enemy with his own hand, and conquered Aquitania. After this conquest, Clovis received the honour of the consulship from the emperor Anastasius. The king of the Franks, having his head adorned with a diadem, appeared in the church of St Martin of Tours, clad in the tunic and purple robe, and was saluted by the people as consul and Augustus. He strengthened his authority, while he tarnished his glory, by murders, and cruelties. He died Nov. 26, 511, having reigned thirty years. His four sons divided his dominions between them. Twenty-five years later, the kingdom of Burgundy came under the power of the Franks, the Ostrogoths were obliged to yield to them Arles and Marseilles, and Justinian conceded to them the sovereignty of Gaul. In the last year of his reign, Clovis had called a council at Orleans, from which are dated the peculiar privileges claimed by the kings of France in opposition to the pope.

CLUB; a society which meets on certain times, at certain places, for various purposes; for instance, chess clubs, racing clubs, &c. The political clubs originated in England, and thence passed to France and to other countries. They were prohibited by a law of the German empire, made in 1793. The French clubs, during the revolution, must be considered as its focus. An accurate acquaintance with their history is indispensable for the understanding of a great part of the revolution. They were connected and regularly organized, and their resolutions were published. In the minuteness of their ramification throughout the country, they resembled the corresponding committees in the American colonies before the American revolution. These French clubs destroyed the constitution of 1795. They were afterwards prohibited. See *Jacobin* and *France*.

CLUE of a sail (in French, *point*) is the lower corner; and hence *clue-garnets* (*cargues-point*, Fr.) are a sort of tackles fastened to the clues of the mainsail and foresail, to truss them up to the yard, which is usually termed *clueing-up* the sails. *Clue-lines* are used for the same purpose as clue-garnets, only that the latter are confined to the courses, whilst the clue-lines are common to all the square-sails.

CLUNY; a town of France, in the Saone-and-Loire, lying between two mountains, on the Grone; nine miles N.W. Macon, twenty-one miles S. Chalons-sur-Saone; population 3400. Here was a Benedictine abbey, founded by William, duke of Aquitaine, at one time the most celebrated in France. Its funds were vast, and its edifices had the appearance of a well built city. The church is one of the largest in France. The town contains three parishes. See *Abelard*.

CLYDE (anciently *Glota*); a large and beautiful river in Scotland, which rises amid the mountains and wastes that separate Lanarkshire from the counties of Peebles and Dumfries, passes by Lanark, Hamilton, Glasgow, Renfrew, Dumbarton, Greenock, &c., and forms finally an extensive estuary or firth before it enters the Irish sea, at the southern extremity of the island of Bute. From its source to Bute its length is about one hundred miles, though in a direct line the distance is much shorter. Its principal tributaries are the Douglas water, the Mouse, the Nethan, the Avon, the Calder, the North Calder, the Kelvin, the White and Black Cart, and the Leven. Near Lanark, it has three celebrated falls—the uppermost, Bonniton Linn, a cascade of about thirty feet; the next, Cora Linn, where the water takes three distinct leaps, each about as high as Bonniton; and the lowest, Stonebyres, which, like Cora, has three distinct falls, measuring altogether about seventy feet. Stonebyres falls are two miles below Lanark; the others are situated about the same distance above that town. The Clyde becomes navigable at Glasgow, and is the most valuable river in Scotland for commerce. See *Glasgow*.

CLYMER, George, one of the signers of the American declaration of independence, was born in Philadelphia in 1739, of a respectable family. His father emigrated from Bristol. The death of his parents left George an orphan at the age of seven years; but he was well taken care of by his uncle, William Coleman, who bequeathed to him the principal part of his fortune. After the completion of his studies, young Clymer entered into his uncle's counting-house, though his inclination for cultivating his mind was much greater than for mercantile pursuits. When discontent had been excited in the colonies by the arbitrary acts of the British parliament, he was among the first in Pennsylvania to raise his voice in opposition, and was named by a meeting held in Philadelphia, Oct. 16, 1773, chairman of a committee appointed to demand of the commissioners for selling the tea which had been imported into America, on account of the East India company, their resignation of the office. The demand was complied with. Mr Clymer was afterwards chosen a member of the council of safety, when the increasing troubles rendered such a body necessary. In July, 1776, he was chosen, together with doctor Benjamin Rush, James Wilson, George Ross, and George Taylor, esquires, to supply the vacancy in congress occasioned by the resignation of the members of the Pennsylvania delegation, who had refused their assent to the declaration of independence. The new members were not present when the instrument was agreed upon, but they all affixed to it their signatures. In the autumn of 1777, his house in Chester county, in which his family resided, was plundered by a band of British soldiers, his property greatly damaged, and his wife and children constrained to fly for safety. In the year 1780, Mr Clymer was a member of an association which made an offer to congress of establishing a bank for the sole purpose of facilitating the transportation of a supply of 3,000,000 of rations and 300 hogsheads of rum to the army, which was on the point of disbanding, in consequence of its distressed condition. Congress received the offer, and pledged the faith of the United States to the subscribers to the bank for their full indemnity, and deposited in it, as well for that purpose as in support of its credit, bills for £150,000 sterling, on the American ministers in Europe. Mr Clymer was one of the gentlemen selected to preside over the institution, the good effects of which were long felt. In Nov. 1780, Mr Clymer was again elected to congress, and strongly advocated there the establishment of a national bank. In the autumn of

1784, during which year party spirit had raged with great violence in Pennsylvania, he was elected to the legislature of that state, to assist in opposing the *constitutionalists*, who were so termed in consequence of their upholding the old constitution, which was justly deemed deficient. Pennsylvania is greatly indebted to his exertions for the amelioration of her penal code, which had previously been of so sanguinary a nature as to produce extreme and almost universal discontent. Mr Clymer was also a member of the convention which framed the present constitution of the federal government, and was elected to the first congress which met when it was about to be carried into operation. After serving throughout the term, he declined a re-election. In 1781, a bill having been passed in congress, imposing a duty on spirits distilled within the United States, he was placed at the head of the excise department, in the state of Pennsylvania. In the year 1796, he was appointed, together with colonel Hawkins and colonel Pickens, to negotiate a treaty with the Cherokee and Creek Indians of Georgia. He subsequently became the first president of the Philadelphia bank, and of the academy of arts. He died, Jan. 23, 1813, in the seventy-fourth year of his age, at Morrisville, Bucks county, Pennsylvania.

CLYTEMNESTRA; daughter of king Tyndarus and Leda, and twin-sister of Helen. She bore her husband, Agamemnon, two daughters, Iphigenia and Electra, and one son, Orestes. During the absence of Agamemnon, in the war against Troy, she bestowed her favours on Ægisthus, and, in connexion with him, murdered Agamemnon on his return from Troy, and, together with her paramour, governed Mycene for seven years. Orestes killed them both. See *Agamemnon* and *Orestes*.

CNIDUS, or GNIDUS; a town in Caria, a province of Asia Minor, and a favourite place with Venus, who was, therefore, surnamed the *Gnidian goddess*. She had there three temples. The first, probably, erected by the Lacedæmonian Dorians, was called the temple of *Venus Doris*. The second was consecrated to her under the name of *Venus Acræa*. The third, called the temple of the *Gnidian Venus*, and, by the inhabitants, the temple of *Venus Euplœa*, contained Praxiteles' marble statue of the goddess, one of the masterpieces of art. This was afterwards removed to Constantinople, where it perished in a conflagration in 1461.

COACH. The coach is distinguished from other vehicles chiefly as being a covered box, hung on leathers. In the most ancient times, kings and princes had particular vehicles which they used on solemn occasions, but these were not covered. We find in the Bible, that such carriages were used in Egypt in the time of Joseph. Covered wagons also appear to be of great antiquity; for, even in Moses' time, such wagons were used for carrying loads, and the wandering Scythians are said to have had wagons covered with leather, to protect them from the weather: so, likewise, had the Spartans, who called these carriages *kanathron*. The seat of the coachman is also a very ancient invention of Oxylus, an Ætolian who took possession of the kingdom of Elis 1100 years B. C. The Romans had both open and covered carriages, the latter being used to transport sick soldiers and aged people. The covered carriage, called *carruca*, first mentioned by Pliny, was invented later. It was adorned with ivory, brass, and, finally, with gold and silver, and used only to convey magistrates, and distinguished individuals of both sexes. The *carrucæ* were drawn by mules. Covered carriages were therefore known to the ancients; but they were not acquainted with coaches, or carriages suspended on leathers. These are said to have been invented in Hungary, and their name, which, in the language of that country, signifies *covered*, is also of Hungarian origin. Others derive the German name of the coach, *Kutsche*, from *Gutsche*, which signified, formerly, a *bed*; or from *Kitsee* or *Kutsce*, considering this as the place where the vehicle was invented. Others think that coaches were invented in France. Charles V. is said to have used such a conveyance, when afflicted with the gout, and to have slept in it. The invention of coaches in Hungary is said to have taken place in 1457; but Isabella, the wife of Charles VI. of France, is said to have made her entrance into Paris, in 1405, in a covered carriage, suspended on leathers. As, at first, none but ladies used these carriages in France, they were called, from this circumstance, *chariots damarcts*. Under Francis I. the construction of coaches was much improved. They were called *carrosses*; and the openings were furnished with leather curtains. The first man who made use of one of these carriages was Raimond de Laval, a cavalier of the court of Francis I., who was so large that no horse could carry him. His coach, and that of the celebrated Diana of Poitiers, duchess of Valentinois (q. v.), were made about 1540, and were the first carriages on springs in Paris; and, ten years after, there were not more than three such vehicles in that city. Under Henry III. (1574—89), the fourth coach was introduced. This was kept by a private person. Before that time they were considered as belonging exclusively to the royal family, or to very distinguished officers. Henry IV., who is known to have been murdered in a coach, kept but one carriage for himself and his wife, as appears from a letter, in which he tells a friend, as an excuse for his absence, that his wife was using the coach. The marshal Bassompierre, in 1599, brought the first coach with glass windows from Italy into France. In 1658, there were 520 coaches in Paris, and the number went on continually increasing. In Germany, the emperors and princes used coaches as early as the fifteenth century. The emperor Frederic III., for instance, went in one to Frankfort in 1474. In 1509, the wife of the elector Joachim I. of Brandenburg had a gilded coach, and twelve others ornamented with crimson. Coaches are said to have been introduced into Spain in 1546, and into Sweden in the last half of the sixteenth century.

The oldest carriages used by the ladies in England were called *whirlicotes*. The mother of king Richard II., who accompanied him in his flight (1360), rode in a carriage of this sort. But *coaches*, properly so called, were first introduced into England from Germany or France, in 1580, in the reign of queen Elizabeth, and the first seen in public belonged to Henry, earl of Arundel. In 1601, the year before the queen's death, an act was passed to prevent men from riding in coaches, as being effeminate; but they were in common use in London about the year 1605. Twenty years afterwards, hackney-coaches were introduced. They were prohibited in 1635, and, in 1637, only fifty hackney-coachmen were licensed. The number of coaches was increased by degrees, and, in 1770, as many as 1000 were licensed. The duty on coaches in England, in 1778, the number then kept being 23,000, amounted to £117,000. The total duty on coaches in England, in 1785, was £154,988; in Scotland, only £9000. The French invented the post-chaise, the use of which was brought into England by Tull, the well-known writer on husbandry. In Switzerland, coaches were a rarity as late as 1650. The manufacture of elegant coaches is a proof of much wealth and mechanical skill in a place; many different artists being employed in their construction, who become skilful only when the demand for their

work is considerable. A very large sort of coaches, called *omnibus*, has lately come into use, first in Paris, and afterwards in London and elsewhere. They serve as means of communication between different parts of a city, and carry a large number of passengers, &c. Quite recently, a stage-coach began to run from Paris to Orleans, containing sixty passengers.

COAHUILA Y TEXAS; a state or province of Mexico, bounded E. by Tamaulipas, S. by New Leon, S. W. by Durango, W. by Chihuahua. Its northern boundary and extent are not well defined. It is watered by the Rio del Norte and its branches. The chief towns are Montelovez and Saltillo.

COAK. See *Coal.*

COAL consists essentially of carbonaceous matter, and, in one variety, the blind coal (see *Anthracite*), this is nearly pure; but, in the greater number of the varieties of coal, there is present a soft, bituminous matter, which communicates to them some peculiar properties. Those which contain much bitumen are highly inflammable, and burn with a bright flame; those in which the carbon predominates burn less vividly. Numerous varieties of coal exist, deriving distinctions partly from their state of aggregation, but principally from the proportions of their bitumen and carbon. Excepting the anthracite, they may be treated of under the two divisions of *black coals* and *brown coals.*

The colour of *brown coal*, as its name imports, is brown: it possesses a ligneous structure, or consists of earthy particles. The colour of *black coal* is black, not inclining to brown, and it does not possess the structure of wood.—The varieties of brown coal are the following:—*bituminous wood*, which presents a ligneous texture, and very seldom any thing like conchoidal fracture, and is without lustre; *earthy coal*, consisting of loose, friable particles; *moor coal*, distinguished by the want of ligneous structure, by the property of bursting and splitting into angular fragments, when removed from its original repository, and the low degree of lustre upon its imperfect conchoidal fracture; *common brown coal*, which, though it still shows traces of ligneous texture, is of a more firm consistency than the rest of the varieties, and possesses higher degrees of lustre upon its more perfect conchoidal fracture. Some varieties of black coal immediately join those of brown coal. They are, *pitch coal* of a velvet-black colour, or, generally inclining to brown, strong lustre, and presenting, in every direction, a large and perfect conchoidal fracture; slate coal, possessing a more or less coarse, slaty structure, which, however, seems to be rather a kind of lamellar composition than real fracture; foliated coal, resembling it, only the laminæ are thinner; and coarse coal in like manner, only the component particles are smaller, and approach to a granular appearance; *cannel coal*, without visible composition, and having a flat, conchoidal fracture in every direction, with but little lustre, by which it is distinguished from pitch coal. All these kinds are joined by numerous transitions, so that it often becomes doubtful to which of them we should ascribe certain specimens, though they undoubtedly are members of this species.

As the preceding varieties of coal consist of variable proportions of bitumen and carbon, they, of course, must vary in their inflammability. Several varieties become soft, and others coke, when kindled, or, in other words, allow of the separation of the bituminous from the carbonaceous part. We perceive this separation in its combustion in a common fire; the coal, when kindled, swelling and softening, exhaling a kind of bitumen, and burning with smoke and light; while, after a certain period, these appearances cease, and it burns only with a red light. The separation is effected more completely by the application of heat in close vessels: the bitumen is melted out, and there is disengaged ammonia, partly in the state of carbonate with empyreumatic oil, and the coal gas (a variety of carburetted hydrogen), often mixed with carbonic acid and sulphuretted hydrogen, the carbonaceous matter being, in a great measure, left, forming coke.

The decomposition of coal is carried on, on a large scale, with a view to collect the products; the gas being used to afford an artificial light, which is clear, steady, easily regulated, and economical; the bituminous matter, or mineral tar, being applied to the uses for which vegetable tar and pitch are employed, and the coked coal being used in the smelting of metallic ores, and for various other purposes, where an elevated and steady temperature is needed.

Coal, excluding anthracite, has been supposed to be of vegetable origin. There is a remarkable graduation from bituminated wood to perfect coal. In some varieties, the structure, and even the remains, of plants are apparent, and its chemical composition agrees with that of vegetable matter. It is difficult to determine, however, in what manner it has been formed, or by what operations the vegetable matter, from which it has originated, has been so far modified, as to have assumed the properties under which it exists. And there are many geologists who regard it, in common with anthracite, as an original mineral deposit.

The varieties called *slate coal, foliated coal, coarse coal, cannel coal*, and *pitch coal*, occur chiefly in the coal formation; some varieties of pitch coal, also the moor coal, bituminous wood, and common brown coal, are met with in the formations above the chalk, the earthy coal, and some varieties of bituminous wood, and common brown coal, are often included in diluvial and alluvial detritus. The coal seams alternate with beds of slaty clay and common clay, sandstone, limestone, sand, &c. They are often associated with vegetable organic remains, in slaty clay; sometimes, also, with shells, and having iron pyrites intermixed with them. Bituminous coal is so universally distributed, that it is unnecessary to attempt the enumeration of its localities.

Coal, as an inflammable substance, appears to have been known to the ancients, and to the Britons, before the Romans visited this island, it being found so frequently in ravines and beds of rivers, of a colour and texture so decidedly different from the strata which in general accompany it; but as, at that period, and for centuries afterwards, the country was covered with immense forests, which supplied abundance of fuel for every purpose of life, there was no necessity for using coal as fuel. The working of coal, therefore, only became an object of attention as population and civilization advanced, when agriculture began to be studied, the woods cleared away, and the arts of civil life cultivated; accordingly we find, that the working of coal in Britain, as an article of commerce, is comparatively of modern date, and appears to have commenced about the end of the 12th century. The first charter giving liberty to the town of Newcastle-upon-Tyne to dig coal, was granted by Henry III. anno 1239; it was then denominated *Sea-coal*, on account of its being shipped for places at a distance. In the year 1281, the Newcastle coal-trade had become so extensive and important that laws were enacted for its regulation. In Scotland, coals began to be wrought much about the same time; and a charter was granted in the year 1291, in favour of the Abbot and convent of Dunfermline in the county of Fife, giving the right of digging coals in the lands of Pittencrieff, adjoining the convent. From this period the working of coal gradu-

ally increased, though on a very limited scale, until the beginning of the last century, when the steam-engine was brought forward by Newcomen in the year 1705, and was applied to collieries in the vicinity of Newcastle about the year 1715. This machine produced a new era in the mining concerns of Great Britain, and as it were in an instant, put every coal-field within the grasp of its owner. Collieries were opened in every quarter; and the coal trade rapidly extended to an astonishing scale. This extension of the trade was greatly aided by James Watt, who so very much improved the principles and power of the steam-engine, as to render it one of the most complete and most useful pieces of mechanism. To Newcomen and Watt the mining interest of Great Britain is highly indebted; to the latter, the empire owes its great rise and improvement as a manufacturing country.

The collieries of Great Britain are now upon the most extensive scale, and are of the first importance to the kingdom, both as regarding its political and commercial interests; so much so that it is evident, without cheap coal, the manufactories of Great Britain, could not be brought forward in competition with those of the other nations of the world, where manual labour is comparatively very low; in short, the coal-mines of Great Britain form a physical and prominent point in the political state of the empire. The capitals employed in the collieries, and in the shipping connected with them, are immense, amounting to many millions. A very considerable proportion of the population of the kingdom is employed in the mines and coal trade, while the ships which carry coals coastwise, are a nursery for thousands of the most intrepid seamen which are to be found in the world.

It cannot easily be estimated what is the total produce of coals in Britain, but it must extend to many millions of tons; for it is known that the output of coal upon the rivers Tyne and Wear, in the counties of Northumberland and Durham, amounts to three millions of tons annually, of which only a small quantity is used in the district, the greater part being shipped coastwise. In these two districts alone, it is estimated that 70,000 people are employed in the coal trade, and that the capital invested in the collieries and shipping is above two millions and a half of money.

The great coal field of Britain, which is composed of numerous subordinate coal-fields, crosses the island in a diagonal direction, the south boundary line extending from near the mouth of the river Humber, upon the east coast of England, to the south part of the Bristol channel on the west coast; and the north boundary line extending from the south side of the river Tay in Scotland, westward by the south side of the Ochil mountains, to near Dumbarton, upon the river Clyde; within these boundary lines North and South Wales are included. This area is about 260 miles in length, and, on an average, about 150 miles in breadth. Within these bounds all the chief coal fields are found upon which collieries have been established in Britain; and no coal field of any consequence has been found, either to the north or south of the lines above mentioned, excepting some small patches of thin coals of inferior quality, and the coal field of Brora in Sutherlandshire, Scotland, which is far disjoined from any other coal field. It is calculated that many centuries must elapse before the present supply of coal in Britain can be exhausted. The coal fields of Durham and Northumberland alone are estimated to furnish their present annual supply for more than 1700 years.

COALITION; in chemistry the reunion or combination of parts which had before been separated. In the beginning of the French revolution, the French authors used this expression, by way of contempt, to denote the confederation of several powers against France; the word *alliance* appearing to them perhaps, too noble for the object. From that time the word has been received into diplomatic language; but there is generally some idea of reproach connected with the use of it. The diplomatists of the continent of Europe have made this distinction between *alliance* and *coalition*, that the former is more general, the latter is directed against a particular enemy for a distinct object. The first coalition against France was concluded between Austria and Prussia for the preservation of the constitution of the German empire, and for checking the progress of the French revolution (7th of Feb. 1792.) The separate peace with Prussia, concluded at Bale (5th of April, 1795,) and the line of demarcation for the north of Germany, were the first steps to the dissolution of the German empire. The next coalition is that of 1793. Germany declared war (22d of March), and was afterwards joined by Portugal, Naples, Tuscany, and the pope. In addition to this, a treaty of alliance was concluded at London, between Great Britain and Russia. The third is the triple alliance entered into at St. Petersburg, by Russia, Austria, and Great Britain (28th of Sept. 1795), at a time when several princes of the empire withdrew their troops. This coalition was dissolved by the peace of Campo-Formio, between Austria and France, in which, at the same time, a general congress for the conclusion of peace with the whole empire was appointed at Rastadt (9th of Dec. 1797, to April, 1799). The negotiations which took place here were declared null by Austria; for, during them, a new coalition (the fourth) had been formed between Russia, the Porte (23d of Dec. 1798) and Britain. Austria and Naples, also, were induced to join it. Separate treaties of peace dissolved it again, viz. the peace of Luneville with Austria and Germany (9th of Feb. 1801), that of Florence with Naples (28th of March 1801) that of Paris with Russia (8th of Oct. 1801), of Paris with the Porte (9th of Oct.), and of Amiens with Great Britain (25th of March, 1802). Of all these states Great Britain first declared war against France (18th of April, 1803), and in April, 1805, new negotiations were begun between Britain, Russia, Austria and Prussia, for another coalition (the fifth) against France. At Petersburg, the two first powers contracted to effect a general confederation of the European states against France, for the restoration of peace and the political balance, and for the foundation of a federative system adapted to secure the rights of nations. All the powers were to be invited to join this confederacy. In the same year, it was partly dissolved by the peace of Presburg with Austria (26th of Dec. 1805), and completely, by the peace of Paris with Russia (20th of July, 1806). Prussia, which till then had not taken an active part, thought herself strong enough to encounter France single-handed. The accession of Britain and Russia (besides the previous junction of Saxony and, probably, of other temporizing cabinets) produced the sixth coalition. The peace of Tilsit (7th and 9th of July, 1807), put an end to this union; and the peace at Vienna (14th of Oct., 1809) terminated the Austrian coalition with Britain (the seventh). Finally, we may mention under this head the last great alliance against France. It consisted first of Russia and Britain, but was increased in succession by the addition of Spain and Portugal, Sweden, Prussia, Austria, the German princes with few exceptions, Naples, and, at last, Denmark. It ended with the peace of Paris (31st of May, 1814). The return of Napoleon, however in 1815, revived it. From this sprang the

'holy alliance' of Russia, Austria, and Prussia, which was joined by the king of France, at Aix-la-Chapelle (q. v.), in 1818. In Britain and the United States of North America, the word *coalition* is used to denote the union of several parties or their leaders against another party; but it always expresses something odious. Thus, for instance, the party of Pitt denounced the *coalition* of Fox and North.

COAT OF ARMS; 1. the surcoat worn by a knight; 2. the ensigns armorial of a family; so called, because originally worn on some part of the armour. Their origin is to be referred to the age of chivalry, when they were assumed as emblematic of the adventures, love, hopes, &c., of the knight, and were useful for distinguishing individuals, whom it was difficult to recognize, covered, as they were, from head to foot, with armour. This, perhaps, may even have been the origin of the usage. As every thing else became hereditary in Europe,—estates, dignities, titles, privileges,—so the favourite emblem of the knight became the adopted badge of the family, the figures or characters employed in them began to receive names, and the language and science of heraldry (q. v.) was formed. The right to bear arms thus became a distinctive mark of gentle birth. In France, the feudal privileges and nobility were abolished by the revolution. Under Napoleon, the imperial *noblesse* wore a certain number of feathers, indicative of their rank; a simple chevalier, one; a baron, three; a duke, seven.

COBALT occurs alloyed with arsenic, nickel, and other metals, and mineralized by oxygen and by arsenic acid. It is obtained, after the ore has been roasted and calcined, in the state of an oxyde, impure from the presence of other metallic oxydes. When this oxyde is obtained in a state of purity, and reduced to the metallic state, we are presented with a metal of a white colour, inclining to gray, and, if tarnished, to red, with a moderate lustre. Its fracture is compact; it is hard, brittle, and of a specific gravity of 7·8. Like nickel, it is sensibly magnetic, and is susceptible of being rendered permanently so. It undergoes little change in the air, but absorbs oxygen when heated in open vessels. It is attacked with difficulty by sulphuric or muriatic acid, but is readily oxidyzed by means of nitric acid. There are but two oxydes of cobalt known. The protoxyde is of an ash-gray colour, and is the basis of the salts of cobalt, most of which are of a pink hue. When heated to redness in open vessels, it absorbs oxygen, and is converted into the peroxyde. It may be prepared by decomposing the carbonate of cobalt by heat, in a vessel from which the atmospheric air is excluded. It is easily known by its giving a blue tint to borax when melted with it, and is employed in the arts, in the form of smalt, for communicating a similar colour to glass, to earthen ware, and to porcelain. *Smalt*, or powder blue, is made by melting three parts of fine white sand, or of calcined flints, with two of purified pearl-ash and one of cobalt ore, previously calcined, and lading it out of the pots into a vessel of cold water; after which, the dark-blue glass, or zaffer, is ground, washed over, and distributed into different shades of colours, which shades are occasioned by the different qualities of the ore, and the coarser and finer grinding of the powder. Smalt, besides being used to stain glass and pottery, is often substituted, in painting, for ultra-marine blue, and is likewise employed to give to paper and linen a bluish tinge. The muriate of cobalt is celebrated as a *sympathetic ink*. When diluted with water, so as to form a pale pink solution, and then employed as ink, the letters which are invisible in the cold, become blue if gently heated. It is prepared by dissolving one part of zaffer in two of diluted nitric acid, with the aid of heat, adding to it of muriate of soda one part, and diluting with twenty parts of water. The peroxyde of cobalt is of a black colour, and is easily formed in the way already mentioned. It does not unite with acids; and, when digested in muriatic acid, the proto-muriate of cobalt is generated with the disengagement of chlorine. When strongly heated in close vessels, it gives off oxygen, and is converted into the protoxyde.

Ores of cobalt: 1. *White cobalt ore*, or *bright white cobalt ore*, consists, principally, of cobalt and arsenic. Its colour is tin-white, liable to tarnish, with little lustre. It occurs massive and crystallized, in cubes and in octohedrons. It is hard and brittle. Specific gravity, 7·3, to 7·7. Before the blowpipe, it melts, and gives an arsenical smoke and odour. It forms a metallic globule, and gives to borax a blue colour. It occurs chiefly in primitive rocks, and is frequently accompanied with bismuth. It is found most abundantly in Germany, Sweden and Norway, and also occurs in several other European countries. 2. *Gray cobalt* ore, is an alloy of cobalt with arsenic and iron, and is sometimes accompanied with small portions of nickel and bismuth. Its colour is light gray; liable to tarnish. It occurs massive or disseminated, and is never crystallized. It has been found in the United States, at Chatham, Connecticut, but has not been wrought advantageously. It also occurs in Bohemia, Saxony, and France. 3. *Red cobalt ore* is a hydrated arseniate of cobalt, of a beautiful peach-blossom red colour. It occurs massive, disseminated, and in minute crystals. It accompanies other ores of cobalt.

COBENTZL, Louis, count of, son of count John of Cobentzl, a diplomatist in the Austrian service, was born at Brussels in 1753. He entered first into the military service of Austria, was appointed minister at Copenhagen, after the revolution of 1771, and at the court of Frederic the Great, from 1775 to 1778. In 1779, he was sent on an embassy to Catharine II. of Russia, whose favour he secured by his gallantry, and by composing and taking part himself in comedies at her private theatre. In 1795, he concluded a grand triple alliance between Russia, Britain, and Austria, against the French republic. Being recalled to Vienna the following year, he was again employed in political negotiations. He was one of the plenipotentiaries who signed the treaty of Campo-Formio, between Austria and France, in October, 1797, and was also sent to the congress of Rastadt. In the following year, he held a conference, at Seltz, with Francis de Neufchateau, a member of the executive directory, respecting the insult offered to Bernadotte at Vienna. He then returned to Petersburg, whence he was summoned, and sent to Luneville; and there concluded a treaty of peace with France, in February, 1801. A few months after, he was appointed minister of state and vice-chancellor for the department of foreign affairs at Vienna. In 1805, he followed the Austrian court to Olmutz, and died at Vienna in 1809.

COBENTZL, John Philip, count de, cousin of the last mentioned individual, was born in Carniola in 1741. He was made a counsellor of finance in 1762, and afterwards privy counsellor at Brussels. In 1779, he was employed as a diplomatist at the conclusion of the peace of Teschen. In 1790, he was sent to Brabant to treat with the insurgent Netherlanders; but the states refused to receive him, on which he retired to Luxembourg, where he published a declaration, by which the emperor of Germany revoked all those edicts which had caused the insurrection, and re-established the previous state of affairs. His failure on this occasion probably prevented him from being again employed till 1801, when he was sent

ambassador to Paris, through the credit of his cousin, and remained there till 1805. He died Aug. 30, 1810. He was the last of the family of Cobentzl.

COBI (in Chinese, *Shamo*); a great desert in the central part of Asia, extending from the sources of the Indus and Ganges, beyond those of the Amour, from twenty-three to twenty-four degrees of longitude in length, and varying from three to ten degrees of latitude in breadth. But little is known of this immense region, of about 847,000 square miles in extent. Its great elevation, and the salt with which it is impregnated, render it very cold. The frightful uniformity of vast fields of sand and gravel is hardly broken by the small rivers, lined with narrow tracts of pasture, by the salt lakes, and a few fertile oases interspersed here and there, like islands in the ocean. A few little hills rise out of the general level, which extends all around the traveller, as far as the eye can reach. The small Mongolian horses wander about in large droves, and the wild *djiggetai* snatches a hasty meal from the pastures. The camel is commonly used by the Mongols to transport burdens.

COBLENTZ (anciently *Confluentia*, from its situation at the confluence of the Rhine and Moselle), formerly the residence of the elector of Treves, then chief place of the French department of the Rhine and Moselle, now the capital of the Prussian circle of government (*Regierungsbezirk*) of Coblentz (belonging to the province of the Lower Rhine), containing 1928 square miles, with 337,470 inhabitants, is situated on a most charming spot. Opposite Coblentz is Thalehrenbreitstein, a small place on the right bank of the majestic river, at the foot of the rock, on which the Prussians rebuilt the fortifications of Ehrenbreitstein, and rendered it one of the most remarkable productions of military architecture. Over the Moselle is a bridge of 536 paces resting upon fourteen arches of stone. From this bridge there is one of the finest views on the Rhine. Coblentz (1050 houses and 14,900 inhabitants) consists of the old city and the new, or Clement-city, and is, in general, well built. There are several fine public buildings. An aqueduct, constructed by the last elector, brings the finest water from a height near Metternich, over the Moselle bridge, into all quarters of the city. The chief articles of commerce are the Moselle wines and French wines. About one mile from the city is a building, formerly a Carthusian monastery, which is well worthy the attention of travellers, on account of the view which it affords of the two rivers on which the city stands. This building is now changed into a fort called *Hunnenkopf*. On the other side of the Moselle fort Francis is situated. These two forts protect the city on the left bank of the Rhine, and some other fortifications are to be added. These works, with those of the strong fortress of Ehrenbreitstein (q. v.), will render Coblentz one of the strongest fortresses, and a very important defence to Germany, particularly to the Prussian monarchy. The confluence of the two rivers has always given Coblentz great military importance, even in the time of the Romans, who built a strong camp here. On the road from Coblentz to Cologne is the monument of general Marceau, mentioned by lord Byron in Childe Harold's Pilgrimage.

COBRA DA CAPELLO; the Portuguese trivial name of the *vipera naja*; the *hooded snake* or *viper* of the English; *serpent à lunettes* of the French; a reptile of the most venomous nature, found in various degrees of abundance in different hot countries of the old continent, and in the lands adjacent. The species of the viper kind are all remarkable for the manner in which they spread out or flatten the sides of the neck and head when disturbed or irritated. In the *cobra da capello* the conformation necessary to this action is found in the most perfect condition, as the animal is provided with a set of ribs or bony processes, moved by appropriate muscles on the sides of the neck, which, when expanded, give the anterior part of the body the appearance of an overhanging arch or hood; on the middle of which, posterior to the eyes, is a greenish-yellow mark, resembling the rim of a pair of spectacles. From this mark the French name is derived. When disturbed by the approach of an individual, or any noise, the *cobra* raises the anterior part of its body, so as to appear to stand erect, expands its hood, and is prepared to inflict a deadly wound. So exceedingly poisonous is its bite, that, in numerous instances which are well authenticated, death has followed within a few minutes; under ordinary circumstances, a few hours is the longest term that intervenes from the infliction of the bite till the death of the sufferer, where prompt measures for his relief have not been resorted to. So numerous are these dreadful vipers in some parts of India and Africa, that they are frequently found in dwelling-houses, and, in some instances, have taken up their quarters in the beds. Death of necessity must follow, under such circumstances, should the animal be alarmed or irritated by any sudden motion. In case a bite is received from this (or, indeed, any other) venomous creature, the first thing to be done is to make a firm and well-sustained pressure beyond the wound, on the side nearest the heart. The excellent experiments of doctor Pennock, which have been already referred to, prove that a sufficient degree of pressure thus kept up will prevent the poison from affecting the system; and this is rendered evident by the good effects derived from ligatures applied around bitten limbs, above the wound, by the natives of India, though such ligatures generally act but imperfectly. The good effects of pressure, combined with the advantage of withdrawing the poison, will be obtained by applying a well exhausted cupping-glass over the wound; a substitute for which may almost always be made of a drinking glass, small bottle, &c., if proper cups be not at hand. It would be well for persons travelling or residing where these vipers are common, to be provided with a bottle of volatile alkali, or spirits of hartshorn, which, applied to the wound several times a-day, and taken internally, in doses of thirty or forty drops, repeated according to circumstances, will avert the injurious consequence of the poison. To heighten the curiosity of the multitude, the jugglers of India select these venomous reptiles for their exhibitions, and, having extracted their fangs, keep them in cages or baskets, to exhibit as dancing snakes. When the cage is opened, the juggler begins playing upon a pipe or other instrument; whereupon the viper assumes the erect attitude, distends its hood, and remains balancing itself in this position until the music is suspended. It is, however, most probable, that this viper, in common with lizards and other animals, is peculiarly affected by musical sounds. A friend, who passed a considerable time in the kingdom of Ava, informed us, that a *cobra* entered a room while a gentleman was playing on the flute, and advanced gently towards him so long as the music continued; whenever it was supended, the animal halted, and when it was entirely stopped, it gradually withdrew. This circumstance induced them to spare the viper, which uniformly made its appearance on several successive days when the flute was played. With the exception of the spectacle mark on the back of the neck, and its distensible hood, the *cobra* is not especially distinguished from other vipers. Its colours are dull, being a dark greenish-brown, lighter towards the inferior parts.

COBURG; a Saxon principality in central Ger-

many, bounded by a number of other small German principalities. The country is mostly mountainous, with fertile plains: minerals and forests abound in it. According to the law of August, 1821, regulating the constitution of the principality, there is a body of representatives, who have a voice in legislation, and particularly in the imposition of taxes. According to the law of Dec. 11, 1809, the feudal privileges were to be abolished by degrees. Coburg has one vote in the general assembly of the diet, and is bound to furnish a contingent of 800 men to the forces of the German confederation. The duke of Saxe-Coburg received, in the division of the former dukedom of Gotha-Altenburg (edict of Nov. 15, 1826), the duchy of Gotha, and several smaller terriorities; so that the dominions of the present duke of Saxe-Coburg-Gotha comprise 969 square miles, and 139,440 inhabitants, of which 201 square miles and 83,000 inhabitants are comprised in the principality of Coburg and its dependencies, which were subject to the duke previous to the large accession of territory just mentioned.

Coburg, the capital of the above dukedom, is situated in the beautiful Itzgrund (valley of the Itz), with 8100 inhabitants, an excellent school, (*gymnasium illustre*), several manufactories, two fairs and considerable trade.

COBURG. Frederic Josias, duke of Saxe-Coburg, an Austrian field-marshal, was born in 1737; in 1788, took Choczim, and, in connexion with the Russian general Suwaroff, defeated the Turks at Focsani in 1789, and conquered Bucharest. In 1793, he commanded against the French, was victorious at Aldenhoven and Neerwinden, took Valenciennes, Condé, Cambray, and Landrécy; but when the duke of York separated himself from the Austrians in order to besiege Dunkirk, Coburg was beaten at Maubeuge, Clerfayt at Tournay, and the British at Dunkirk; and, in consequence of this, Coburg was again defeated at Fleurus and Aldenhoven. He retreated over the Rhine, gave up his command, and died in his native city in 1815.

COBURG, SAXE, Prince Leopold of. See *Charlotte Augusta*.

COCAGNA; an annual public festival instituted by the government of Naples, in which food and wine in fountains and from barrels are given to the people. Hence it is said of a country of comfort and plenty, "It is the land of Cockaigne." Something similar were the *congiaria* of the ancient Romans.—*Mats de cocagne;* masts besmeared with soap for the public amusement, which those who have courage for the enterprise endeavour to climb, for the sake of a prize which is fixed on the top.

COCCEII, Henry, born, 1644, at Bremen, studied at Leyden in 1667, and in 1670, in England; was, in 1672, professor of law at Heidelberg, and, in 1688, at Utrecht; in 1690, regular professor of laws at Frankfort on the Oder; repaired to the Hague, in 1702, without giving up his office, on occasion of the disputes as to the hereditary succession of the house of Orange; received for his services, in 1713, the rank of baron of the empire, and died in 1719. As a lawyer, he was the oracle of many courts, and his system of German public law (*juris publici prudentia*) was almost a universal academical text-book of this science. Cocceii did not owe his profound juridical learning so much to skilful teachers, for he had only heard lectures on the institutes, but to his great industry, which he carried to such an extent, that he allowed but a few hours each night to sleep, lived with the utmost temperance, and even abstained several years from taking dinner. He was mild, obliging, and of an exemplary honesty and disinterestedness. His disputations, *Exercitationes curiosæ*, and *Dissert. varii Argumenti*, in 4 vols. 4to; his *Consilia et Deductiones*, 2 vols. in folio; his *Grotius illustratus*, 3 vols. in folio.—His eldest son, Samuel, baron of Cocceii, born, 1679, at Heidelberg, was, in 1702, professor at Frankfort on the Oder, and rose, through many degrees, to the dignity of grand chancellor of all the Prussian dominions. He died in 1755.—Charles Louis Cocceii, who died in 1808, in Prussia, was the last of this distinguished family.

COCCUS, in zoology; a genus of insects of the order of *heteroptera*, family *gallinsecta*. Generic character; *antennæ* filiform, of ten or eleven articulations in both sexes, shorter than the body; rostrum pectorale, conspicuous only in the females; males with two large incumbent wings; females apterous, subtomentose, fixed, and becoming gall-shaped or shield-shaped after impregnation. These little insects are remarkable for many peculiarities in their habits and conformation. The males are elongated in their form, have long, large wings, and are destitute of any obvious means of suction; the females, on the contrary, are of a rounded or oval form, have no wings, but possess a beak or sucker, attached to the breast, by which they fix themselves to the plants on which they live, and through which they draw their nourishment. At a certain period of their life, the females attach themselves to the plant or tree which they inhabit, and remain thereon immovable during the rest of their existence. In this situation, they are impregnated by the male; after which, their body increases considerably, in many species losing its original form, and assuming that of a gall, and, after depositing the eggs, drying up, and forming a habitation for the young. This change of form is not, however, constant to all the species, which has given rise to a division of the genus into two sections:—those which assume a gall shape, in which the rings of the abdomen are totally obliterated, are called *kermes* by some authors; and those which retain the distinct sections of the abdomen, notwithstanding the great enlargement of the body, are called *true cocci*, or *cochineal*. They are impregnated in the spring, after having passed the winter fixed to plants, particularly in the bifurcations, and under the small branches. Towards the commencement of summer, they have acquired their greatest size, and resemble a little convex mass, without the least appearance of head or feet, or other organs. Many species are covered with a sort of cottony down. Each female produces thousands of eggs, which are expelled by a small aperture at the extremity of the body. As soon as they are produced, they pass immediately under the parent insect, which becomes their covering and guard; by degrees, her body dries up, and the two membranes flatten, and form a sort of shell, under which the eggs, and subsequently the young ones, are found coccated. Soon after the death of the mother, the young insects leave their hiding-place, and seek their nourishment on the leaves, the juices of which they suck through the inflected rostrum, placed beneath their breast.

But it is with a view to their importance as an article of commerce, arising from their use in the arts, that the insects of this genus are particularly interesting. When it is considered that the most brilliant dyes and the most beautiful pigments, as well as the basis of the most useful kinds of cement, are their product, it will be acknowledged, that to none of the insect tribe, except, perhaps to the bee and the gall insect, are we more indebted than to these singular and apparently insignificant little beings. Kermes, the scarlet grain of Poland, cochineal, lac-lake, lac-dye, and all the modifications of gum-lac, are either the perfect insects dried, or the secretions which they form. The first mentioned

substance is the *coccus ilicis*. It is found in great abundance upon a species of evergreen oak (*quercus coccifera*), which grows in many parts of Europe, and has been the basis of a crimson dye from the earliest ages of the arts. It was known to the Phœnicians before the time of Moses; the Greeks used it under the name of κοκκος, and the Arabians under that of *kermes*. From the Greek and Arabian terms, and from the Latin name *vermiculatum*, given to it when it was known to be the product of a worm, have been derived the Latin *coccineus*, the French *cramoisis* and *vermeil*, and the English *crimson* and *vermilion*. The early Jews, the Greeks, the Romans, and, until lately, the tapestry-makers of Europe, have used it as the most brilliant red dye known. The scarlet grain of Poland (*coccus Polonicus*) is found on the roots of the *scleranthus perennis*, which grows in large quantities in the north-east of Europe, and in some parts of England. This, as well as several other species, which afford a similar red dye, have, however, fallen into disuse, since the introduction of cochineal. This valuable and most important material is the *coccus cacti* (Lin.), a native of Mexico, and an inhabitant of a species of cactus, called *nopal*, which was long thought to be the *cactus cochinilifer* (Lin.), but which Humboldt considers a distinct species. The trees which produce the cochineal are cultivated for this purpose in immense numbers; and the operation of collecting the insects, which is exceedingly tedious, is performed by the women, who brush them off with the tail of a squirrel or stag. The insects are killed by being thrown into boiling water, placed in ovens, or dried in the sun. Those which are killed by the latter method fetch a higher price, from the white powder, covering the insect, being still retained, and thus preventing, in a great measure, the adulteration of the article. The quantity annually exported from South America is immense; the export value being not less than £500,000. Cochineal was cultivated by the Mexicans previous to the conquest, but probably not to any great extent. Cortez received orders from the Spanish court to pay attention to this valuable dye; and, from that time, the quantity increased very rapidly; but, the trade having been carried on only through Spain, it was not until lately so generally used as it is likely to be in future. Cochineal is also raised in Peru, and several other parts of Spanish America, and becomes every year an article of greater importance to the commerce of that country. The finest, however, continues to be prepared in Mexico and Guatimala. In the East Indies, a very inferior kind has been reared, which produces a coarse scarlet dye. Hayti and Brazil have tried to encourage the propagation of this insect.

The natural dye which this little animal affords in such abundance is a deep crimson; and the colour called *scarlet* was not discovered until the effect produced by infusing the animal matter in a solution of tin was noticed by a German chemist, in 1643; after which a manufactory of this colour was established in London.

Lac is a secretion from a species of coccus inhabiting India, where it is found in astonishing abundance. In its native state, not yet separated from the twig on which it has been deposited, it is called *stick-lac*; when separated, powdered, and the colouring matter washed from it, it is denominated *seed-lac*; *lump-lac* when melted into cakes, and *shell-lac* when purified and formed into thin *laminæ*. *Lac-lake* is the colouring matter of stick-lac precipitated from an alkaline lixivium, by means of alum.

COCHABAMBA; a town of Bolivia, in the province of Cochabamba, in a fertile valley; 90 miles N. N. W. La Plata, 140 S. W. Potosi; lon. 67° 24′ W.; lat. 18° 25′ N. The province has a mild climate, and produces an abundance of grain, also sugar and cattle. Population about 100,000.

COCHIN, Charles Nicolas, engraver, born in Paris in 1688, practised painting till his twenty-third year, which was of considerable advantage to him in the art of engraving, to which he afterwards devoted himself. In 1731, he became a member of the academy of Paris, and died in 1754. His son, of the same name, devoted himself to etching rather than to engraving. His productions are superior to those of his father. The collection of his works contains more than 1500 pieces, among which there are 112 likenesses, in the form of medals, of the most renowned French scholars and artists of his time, who were almost all his friends. We have, besides his essays in the memoirs of the academy, several printed works of his, which contain interesting observations on different subjects of art, for instance, on Herculaneum. His frontispieces and vignettes are remarkable for neatness and taste. His views o sixteen French seaports are of great value. His composition, in general, is rich, delicate, and pleasing. He was a member of the academy, and occupied several places of importance.

COCHIN-CHINA, Empire of, consists of a part of the kingdom of Kamboja (Cambodia), of Cochin China Proper, and of Tonquin: the two last are called, by the natives, by the common appellation *Annam*. This empire is bounded on the west by Siam and Laos, on the north by China; the sea is the southern and eastern boundary. Cochin-China extends from 8° 25′ to about 23° N. lat., the extreme length being a little over 1000 miles; the breadth varies from 70 to 220 miles; its area is estimated at about 135,000 square miles. It is politically divided into the vice-royalties of Kamboja and Tonquin, and Cochin-China, which is administered by the king in person. The country is traversed by a lofty chain of mountains, from which numerous small rivers descend into the sea, forming numerous sand-banks along the coast. The Kamboja or Mecon, and the Song-koy or river of Tonquin, are considerable streams. The climate is healthy. In Cochin-China, the rainy season continues from October till March, and neither the heat nor the cold is excessive. In Tonquin, on the other hand, the rains commence in May, and terminate in August. The heat and cold are both extreme. The gulf of Tonquin and the neighbouring seas are exposed to the ravages of the typhoons, which are rarely felt below the latitude of 16° N. The forests furnish the eagle-wood, the stick-lac, and valuable timber for building and furniture. The orange and lichi are of excellent quality. Rice, sugar-cane, betel, indigo, cotton, and potatoes are the principal productions of agriculture. The true cinnamon is a native of Cochin-China. The mulberry is extensively cultivated for the silk-worm, and the tea-shrub is common in the country. Elephants, used in war, buffaloes, which are yoked to the plough, tigers, rhinoceroses, the wild boar, the horse, which is small, the ox, a small, reddish-brown animal, and several species of deer, are the principal quadrupeds. Sheep are very rare. The poultry is numerous and very good. The seas and rivers abound with fish, which supply a great number of the inhabitants with food. Neither the flesh of the buffalo nor that of the ox is eaten by the Cochin-Chinese, and milk they hold in abhorrence, considering it as blood. The Annam race, comprehending the Cochin-Chinese and the Tonquinese, are a short, but active and hardy people. In the useful arts, they have made considerable progress. Their language is monosyllabic. They have no literature of their own, and receive all their books from the Chinese. In writing the Chinese characters, the elementary ones are the same, but they

make considerable changes in combining them. Their manners are lively and cheerful; their character mild and docile. There are two classes, the commonalty and nobility or mandarins. The government is despotic; the chief instrument is the rod, which is freely administered. The general administration is conducted by a supreme council and six ministers of state. Besides these, there are three other superior officers, called *kun*—the viceroys of Tonquin and Kamboja, and the minister of elephants, who is properly prime minister, and minister for foreign affairs. Every male inhabitant, between eighteen and sixty years of age, is at the disposal of the state; and, in Cochin-China, every third man on the rolls performs actual service during every other three years. These conscripts are called soldiers, and wear uniforms, but are, in reality, engaged as labourers on the public works and in the menial service of the public officers. The royal guard of 30,000 men is always stationed near the person of the king. The ordinary force consists of about 360,000 troops and 800 elephants, cavalry not being at all used. The effective force, regularly armed and disciplined, is not more than 50,000. They are armed partly with muskets and partly with spears. There is no established religion in Annam. The ministers of religion are few and little respected; the temples mean and little frequented. The lower orders, in general, follow the worship of Buddha or Fo. Persons of rank are of the sect of Confucius; but the only part of the religious belief which assumes a systematic form, is the worship of the dead. Polygamy is permitted to any extent, as the wife is a mere chattel purchased by the husband. Marriages, however, are indissoluble, except by mutual consent. The population has been estimated, by some writers, at 22,000,000, but does not, probably, exceed 10,000,000, perhaps not 6,000,000. The direct commercial intercourse between Cochin-China and Europe and America, has been very inconsiderable, but is now on the increase. The foreign trade, by sea, is principally with China, Siam, and the British ports within the straits of Malacca. The principal places from which it is conducted are Saigon in Kamboja, Hue, the capital of the empire, in Cochin-China, and Cachao in Tonquin. The exports are cinnamon, pepper, areca, raw silk, sugar, dye-woods, cardamoms, ivory, elephants' and rhinoceros' hides, &c.

According to the Chinese annals, Annam was conquered by China, B. C. 214, and colonized by numerous bodies of Chinese. After various revolutions, in which the Chinese yoke was thrown off, and Tonquin, and Cochin-China were alternately conquerors, the present order of things was established by events which took place at the end of the 18th century. The Taysons, three brothers from the lowest ranks of the people, had rendered themselves so powerful as to obtain possession of nearly the whole country; the king had perished in the war against them. His young son, Gialong, having been intrusted to the care of the bishop of Adran, a French missionary, obtained, through his influence, the assistance of some Europeans, by whose means he formed a navy, disciplined his troops, and constructed fortifications in the European manner. He succeeded, after a struggle of twelve years, in subduing the Taysons, conquered Tonquin in 1802, Kamboja in 1809, and left the empire, on his death, in 1819, to his present majesty, Meng-meng, his illegitimate son, who, in 1821, was regularly invested with the government of Annam by the court of China. See La Bissachere's *Etat actuel du Tunquin, de la Cochinchine*, &c., Paris, 1812; White's *Voyage to the China Sea*, Boston, 1823; and particularly Crawfurd's *Embassy to Siam and Cochin-China*, London, 1828.

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COCHINEAL. See *Coccus*.

COCHRANE, Captain John Dundas, a noted pedestrian, was a nephew of Lord Cochrane, now earl of Dundonald. He travelled on foot through France, Spain, and Portugal, then through Russia to Kamtschatka, see *Narrative of a Pedestrian Journey through Russia*, &c., 1820—23, London, 1834, and died in 1825, in Colombia, whether he had gone with a view of travelling through South America on foot.

COCK (*phasianus gallus, L.*); the well-known chieftain of the poultry-yard, and rural announcer of the passage of time; whose shrill clarion, heard in the still watches of the night, inspires the invalid with cheering hopes of the coming dawn, and informs the way-worn traveller of his approach to the habitations of his kind; the appropriate emblem of vigilance, virility, warlike daring, and gallantry: domesticated, but not subdued, he marches at the head of his train of wives and offspring, with a port of proud defiance, not less ready to punish aggression against his dependents than to assert his superiority upon the challenge of any rival. At what time this valuable species of pheasant was brought under the immediate control of man, it is now impossible to determine; but, as the forests of many parts of India still abound with several varieties of the cock in the wild or natural condition, it is quite reasonable to conclude that the race was first domesticated in the Eastern countries, and gradually extended thence to the rest of the world. It is stated that the cock was first introduced into Europe from Persia; and Aristophanes speaks of it as the *Persian bird*. Nevertheless, it has been so long established throughout the western regions, as to render it impossible to trace its progress from its native wilds.

The cock has his head surmounted by a notched, crimson, fleshy substance, called *comb*: two pendulous fleshy bodies of the same colour, termed *wattles*, hang under his throat. The hen has also a similar, but not so large nor so vividly coloured excrescence on her head. The cock is provided with a sharp horn or spur on the outside of his tarsus, with which he inflicts severe wounds; the hen, instead of a spur, has a mere knot or tubercle. There is, in both sexes, below the ear, an oblong spot, the anterior edge of which is reddish, and the remainder white. The feathers arise, in pairs, from each sheath, touching by their points within the skin, but diverging in their course outwards. On the neck, they are long, narrow, and floating; on the rump, they are of the same form, but drooping laterally over the extremity of the wings, which are quite short, and terminate at the origin of the tail, the plumes of which are vertical. In the centre of the cock's tail are two long feathers, which fall backwards in a graceful arch, and add great beauty to the whole aspect of the fowl. It is in vain to offer any description of the colour of the plumage, as it is infinitely varied, being in some breeds of the greatest richness and elegance, and in others of the simplest and plainest hue. Except in the pure white breeds, the plumage of the cock is always more splendid than that of the hen. We cannot contemplate the cock, when in good health and full plumage, without being struck with his apparent consciousness of personal beauty and courage. His movements and gestures seem all to be influenced by such feelings, and his stately march and frequent triumphant crowing express confidence in his strength and bravery. The salacity of the cock is excessive, and one is known to be quite sufficient for the fecundation of ten or fifteen hens. His sexual powers are matured when he is about six months old, and his full vigour lasts for about three years, varying in earliness of maturity and duration with his size and the climate.

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The hen is ready to commence laying after she has moulted or changed her plumage, and is not at the trouble of making a regular nest. A simple hole, scratched in the ground, in some retired place, serves her purpose, and she generally lays from twelve to fifteen eggs before she begins to sit upon them for the purpose of hatching. Having thus taken possession of her nest, she becomes a model of enduring patience, remaining fixed in her place until the urgency of hunger forces her to go in search of food. A short time suffices; she runs eagerly about in quest of sustenance, and soon resumes her charge. Her eggs are diligently turned and shifted from the centre to the edge of the nest, so that each may receive a due degree of genial warmth, and it is not until about twenty-one days have elapsed that the incubation is completed. The strongest of the progeny then begin to chip the shell with the bill, and are successively enabled to burst their brittle prisons. She continues upon the nest till the whole are hatched and dry, and then leads them forth in search of food. The hen, except when accompanied by a young brood, is always timid, and ready to fly from disturbance; but when she is engaged in discharging the duties of maternity, her whole nature is changed. She fiercely and vigorously attacks all aggressors, watches over the safety of her young with the utmost jealousy, neglects the demands of her own appetite to divide the food she may obtain among her nurslings, and labours with untiring diligence to provide them sufficient sustenance. The limits within which we are restricted forbid the attempt to give a complete history of this valuable species, which is, in every point of view, interesting. To detail all that would be necessary to illustrate it, as an object of natural history and domestic economy, —the modes of breeding, rearing, preparing for the table, &c.,—would require a small volume. Fortunately, almost every one, who will employ his own observation, may readily arrive at such knowledge. Very full histories of the species are given by Buffon and other standard authors. Temminck has, perhaps, offered the most complete, in his *Histoire des Gallinacés*. See *Incubation*.

Cock-fighting was an amusement of the Greeks and Romans. An annual cock-fight was instituted at Athens, and Æschines reproaches Timarchus, and Plato the Athenians in general, with their fondness for the cock-pit. The breeds of Rhodes and of Tanagra in Bœotia were in great esteem in Greece. The Romans seem to have used quails and partridges also for this purpose. Mark Antony was a patron of the pit, but, in his matches with Octavius, it was observed that Cæsar's cocks were always victorious. This barbarous and brutalizing spectacle, it is well known, has been a favourite sport with the English, although repeatedly denounced and prohibited by the laws; but it is now deservedly in disrepute. Many nice rules are given for the training and dieting of cocks, and for the choice of individual combatants. "The best cocks," says one of the many English writers on this subject "should be close hitters, deadly heelers, steady fighters, good mouthers, and come to every point." Great difference of opinion has prevailed as to the size most proper for game-cocks. Hoyle settles it at not less than 4 lbs. 8 oz., nor above 4 lbs. 10 oz. The *strain* from which the cock is chosen ought to be distinguished for victory. For the combat, they are armed with steel or silver spurs, or *gaffles*. The place appropriated to fighting is called the *pit*, and consists generally of a mound of earth, covered with sod, and surrounded by seats in circular tiers. The battle is conducted by two setters, who place the cocks beak to beak. When they are once pitted, neither of the setters-to can touch his cock, so long as they continue to fight, unless their weapons get entangled.—Cock-fighting is prevalent in China, Persia, and Malacca.

Cock-pit; the place where cock-fights are held.—In navigation, the *cock-pit* of a man of war comprises the apartments of the surgeon and his mates, being the place where the wounded men are dressed in battle, or at other times. It is situated under the lower deck.

COCKADE (from *cocarde*); a plume of cock's feathers, with which the Croats adorned their caps. A bow of coloured ribbons was adopted for the cockade in France, which soon became a national emblem and party signal. During the French revolution, the tri-coloured cockade became the national distinction. National cockades are now to be found over all Europe. In some countries, the law requires every citizen to wear one, and the deprivation of them is a disgraceful punishment, as in Prussia. In point of fact, the rule requiring them to be worn is but little observed.

COCKCHAFFER; a species of coleopterous insect, belonging to the genus *melolontha* (Fab.), remarkable for the length of its life, in the worm or larve state, as well as for the injury it does to vegetation, after it has attained its perfect condition. By Linnæus, this species, which is also known by the trivial names of *may-bug*, *door beetle*, &c., was placed in the genus *scarabæus*, or *beetle* (see *Beetle*); and it is true, that the *melolontha* have the general aspect, conformation, and habits of the beetles. They differ from them, however, in having the body less depressed, swelling out above and below into a sort of hump. The head is engaged in the corselet, which is slightly narrowed in front, and most commonly attached to the *elytra* behind. The *antennæ* which are foliated in a mass, are composed of ten joints, the last of which terminates the mass like a plume, which the insect displays at will, sometimes to the number of seven plates, larger and more perfectly developed in the males than females. The bodies of *melolontha* are very often velvet-like, and covered with hairs and imbricated scales, differently coloured like the butterflies. Some species are very highly adorned in this way, and present combinations of brilliant and beautiful colours.

The may-bug (*melolontha vulgaris*) is hatched from an egg which the parent deposits in a hole about six inches deep, which she digs for the purpose. Her eggs are oblong, of a bright yellow colour, and are placed regularly side by side, though not included in any common envelope. At the end of about three months, the insects come out of the eggs as small grubs or maggots, and feed upon the roots of vegetables in the vicinity with great voracity. As they increase in size and strength, they become able to make their way with ease under ground, and continue their ravages upon the roots of plants. When the worm has attained its greatest size, it is an inch and a half long by more than half an inch thick, perfectly white, with a red head, having a semicircular lip, and a strong pair of jaws, with which it cuts the roots, for the purpose of sucking out their fluids. It has two antennæ, but is destitute of eyes. The subterranean existence of these animals is extended to four years, and, as their food is not accessible during the cold season, they bury themselves sufficiently deep in the soil to be safe from the frost, and pass the winter in a state of torpidity. When the spring restores them to animation and activity, they revisit the upper stratum of the ground, having, at each annual awakening, undergone a change of skin.

At the end of the third year, they have acquired their full growth as larves; they then cease eating, and void the residue of their food, preparatory to the

change or metamorphosis which they are about to undergo. If opened at this period, their strongly muscular integument is found to be completely filled with a mass of white, oily matter, resembling cream, apparently destined as a reserve for the alimentation of the insect during the period of its remaining in the form of a nymph, which is scarcely less than six months. To undergo their final change, these larvæ bore into the earth to the depth of two feet or more, where they form a rounded cavity, the sides of which are smoothed and consolidated by the application of a fluid disgorged from their mouths. The larva being thus secured, it soon begins to contract in length, swells, and bursts its skin, coming therefrom as a soft, whitish nymph, having all the members shrunk and folded, uniformly arranged in the same manner exhibiting the rudiments of *elytra, antennæ*, &c. The insect then gradually acquires consistence and colour, becoming of a brownish hue. This state continues about three months, by the end of which time the insect disengages its wings, limbs, and antennæ, and assumes its rank as a perfect coleopterous insect. It is in the month of February that the larva changes to nymph. During the months of March and April, it approaches the surface of the earth, and, about the beginning of May, escapes from its grovelling mode of life to soar through the air, disporting in sunshine and shade. From this circumstance, the German trivial name of *Maikafer*, and the English *may-bug* or *beetle* have been given. The term *cockchaffer*, applied to the common species, is evidently made up from the German.

Cockchaffers, in their perfect state, pass the greater part of the day in a state of slumber or quietude, on the leaves of the trees which they feed on, unless disturbed by the too great heat of the sun which arouses them to fly to the shade. At eventide, the whole of this drowsy population take wing, for the sake of procuring food. Their flight is loud, humming, and generally with the wind; and so little is the insect capable of directing its course, that it strikes violently against every object in the way. This peculiarity has given origin in France, to a proverbial expression, applied to a thoughtless, blundering person, who is said to be as stupid as a may-bug; *Etourdi comme un hanneton.*

The generative act of these insects has some peculiarities. The male, which is generally smaller than the female, and always cognizable by the greater size of his foliated antennæ, previous to this operation, is very active. As soon however, as this object is accomplished, he seems to fall into a state of faintness and lethargy, and the female, in flying from place to place, carries him with her, hanging in a helpless, inverted position, with his back downwards, and his feet in the air. The male organs are quite singular, being formed in such a manner that the organ conveying the fecundating fluid is introduced by the aid of two elongated horns, which, by their approximation, form a sort of stiff point. These two pieces lie over another, within which are muscles, that at the proper moment, contract, and thus dilate the sheath, which may be compared to a surgical dilator. To this expansion of the sheath the adherence of the sexes during the act of generation is owing. The males perish as soon as they have fulfilled this great object of their being, as they thenceforth cease to eat. The fecundated female forsakes the trees for the earth, into which, with her claws, she bores a hole six or eight inches deep, in which she places from fifty to eighty eggs. This completes the circle of her actions, and she soon after dies; though it has been said, without any foundation in observation or analogy, that the females, after laying their eggs, resume their former habits, and live among the trees.

COCK-FIGHTING. See *Cock*.

COCK-PIT. See *Cock*.

COCKROACH (*blatta*, Lin.); a genus of insects belonging to the orthopterous or straight-winged order, characterized by an oval, elongated, depressed body, which is smooth on its superior surface. The head is inclined, short, and concealed under the corselet; the *antennæ* are long, bristly, formed of numerous pieces, and inserted in a groove within the eyes. The corselet is scutiform, covering the head and origin of the *elytra*; the abdomen is terminated by two conical appendages. The legs are beset with little spines; the feet are long and compressed; the *tarsi* have five joints. They have a longitudinal crop or craw; the gizzard, or muscular stomach, is internally provided with strong hooked teeth: from eight to ten *cœca* are found about the pylorus.

These insects are among the most disagreeable of the annoyances to which the dwellings of man are subject, and, where their multiplication is permitted, the ravages they commit are extensive and vexatious. They are all nocturnal, and exceedingly agile; their flattened bodies allow them to hide, with ease, in every crevice, whence they sally forth in hordes during the night, to devour every sort of provision which is not secured from their voracity. Like all other depredators, they are thrown into confusion and put to flight by the presence of light, whence they were, in ancient times, appropriately called *lucifugæ*, or *light-shunners*. Their destructiveness is not confined to articles of provision for the table; silk, woollen, and even cotton cloths are devoured, or rendered useless by being gnawed through. At some seasons of the year, when the male cockroaches fly about, they are very troublesome, especially about twilight, when they dash into rooms, and often strike against the faces of those present, to the great alarm of females, who generally dread them excessively. The presence of a light, it is true, would secure us against such invasions from the cockroach, but a great number of other nocturnal insects would be attracted by its glare, and induce a greater degree of annoyance. When a cockroach takes refuge, or seeks concealment upon any person, he will inflict a smart bite, if particularly hurt or alarmed.

The sapient Sancho Panza declares, that there is a remedy for everything but death; and it is truly happy for mankind, that the multiplication of this pestilent race may be repressed by aid of their own voracity. If to a quantity of Indian corn meal about one-third of white or red lead is added, and the mixture is moistened with molasses, so as to make it moderately adhesive, the cockroaches will greedily devour it. The repetition of this poisoned food for a few nights is generally sufficient to reduce their numbers to a very few, even in the most infected houses, and will eventually cause the destruction of the whole. They may also be poisoned with preparations of arsenic, sublimate, &c., mixed with sugar or molasses, of which they are very fond. Traps, especially designed for their capture, are sometimes to be found at the potteries. A paste-board or card cover, well balanced upon two pins, and placed upon the edge of a vessel, nearly filled with molasses and water, makes a very good trap. The dish should be so placed, that they can readily mount upon the cover, which revolves on its axis whenever the equilibrium is disturbed, and throws the cockroaches into the fluid.

Cockroaches, like other orthopterous insects, do not undergo a complete metamorphosis: the larvæ and nymphs resemble the perfect insect, except that they have merely rudiments of wings. The females lay their eggs successively and singly. The egg has a very singular appearance, being large, cylindric,

rounded at both ends, and having a projecting dentated line or keel, throughout its length, on one side. This egg is half as large as the belly of the female, and she carries it for seven or eight days, attached to the posterior part of the abdomen, and, finally, attaches it to some solid body, by means of a gummy fluid.

The species of cockroach at present determined, are about twelve in number. Among these, the *blatta Americana* and the *blatta Orientalis* are the especial pests of America. The first mentioned is the largest of the genus, and grows to be two or three inches long, including the *antennæ*. Throughout the southern portion of this continent, and in the West India islands, this species (*blatta Americana*), called *Kukkerlac* by the Dutch, is very numerous and troublesome. The *blatta Orientalis*, or common kitchen cockroach, was originally brought from Asia to Europe, and thence to America. It is now thoroughly domiciliated in all parts of that country, to the great vexation of its inhabitants. This species is fond of warmth, and makes its abode near to the kitchen fire-place, about ovens, stoves, &c.

COCKSWAIN, or COXEN; the officer who manages and steers a boat, and has the command of the boat's crew. It is evidently compounded of the words *cock* and *swain*, the former of which was anciently used for a yawl, or small boat, as appears from several authors, but has now become obsolete.

COCLES. See *Horatius*.

COCOA-NUT. The cocoa-nut is a woody fruit, of an oval shape, from three or four to six or eight inches in length, covered with a fibrous husk, and lined internally with a white, firm, and fleshy kernel.

The tree (*cocos nucifera*) which produces the cocoa-nut, is a kind of palm, from forty to sixty feet high, having on its summit only leaves or branches, appearing almost like immense feathers, each fourteen or fifteen feet long, three feet broad, and winged. Of these, the upper ones are erect, the middle ones horizontal, and the lower ones drooping. The trunk is straight, naked, and marked with the scars of the fallen leaves. The nuts hang from the summit of the tree in clusters of a dozen or more together. The external rind of the nuts has a smooth surface, and is of a somewhat triangular shape. This encloses an extremely fibrous substance, of considerable thickness, which immediately surrounds the nut. The latter has a thick and hard shell, with three holes at the base, each closed with a black membrance. The kernel lines the shell, is sometimes nearly an inch in thickness, and enclose a considerable quantity of sweet and watery liquid, of a whitish colour, which has the name of *milk*. This tree is a native of Africa, the East and West Indies, and South America, and flourishes best in a sandy soil.

Food, clothing, and the means of shelter and protection, are all afforded by the cocoa-nut-tree. The kernels of the nuts, which somewhat resemble the filbert in taste, but are of much firmer consistence, are used as food in various modes of dressing, and sometimes are cut into pieces and dried. When pressed in a mill, they yield an oil, which in some countries, is the only oil used at table; and which, when fresh, is equal in quality to that of almonds. It, however, soon becomes rancid, and, in this state, is principally used by painters. The milk or fluid contained in the nut is an exceedingly cool and agreeable beverage, which, when good, somewhat resembles the kernel in flavour. Cocoa-nut-trees first produce fruit when six or seven years old; after which each tree yields from fifty to a hundred nuts annually. The fibrous coats which envelop the cocoa-nuts, after having been soaked for some time in water, become soft. They are then beaten, to free them from the other substances with which they are intermixed, and which fall away like saw-dust, the stringy part only being left. This is spun into long yarns, woven into sail-cloth, and twisted into cables, even for large vessels. The cordage thus manufactured is, in several respects, preferable to that brought from Europe, but particularly for the advantages which are derived from its floating in water. The woody shells of the nut are so hard as to receive a high polish, and are formed into drinking cups, and other domestic utensils, which are sometimes expensively mounted in silver. On the summit of the cocoa nut-tree, the tender leaves, at their first springing up, are folded over each other, so as somewhat to resemble a cabbage. These are occasionally eaten in place of culinary greens, and are a very delicious food; but, as they can only be obtained by the destruction of the tree, which dies in consequence of their being removed, they are in general considered too expensive a treat. The larger leaves are used for the thatching of buildings, and are wrought into baskets, brooms, mats, sacks, hammocks, and many other useful articles. The trunks are made into boats, and furnish timber for the construction of houses; and when their central pith is cleared away, they form excellent gutters for the conveyance of water. If, whilst growing, the body of the tree be bored, a white and sweetish liquor exudes from the wound, which is called *toddy*. This is collected in vessels of earthen ware, and is a favourite beverage in many parts where the trees grow. When fresh, it is very sweet; in a few hours it becomes somewhat acid, and, in this state, is peculiarly agreeable; but, in the space of twenty-four hours, it is complete vinegar. By distillation, this liquor yields an ardent spirit, which is sometimes called *rack*, or *arrack*, and is more esteemed than that obtained by distillation from rice or sugar, and merely fermented, and flavoured with the cocoa-nut juice. If boiled with quick-lime, it thickens into a sirup, which is used by confectioners in the East Indies, though it is much inferior to sugar produced from the sugar-cane.

COCYTUS (from κωκυω, to lament); a river of ancient Epirus, which falls into the Acheron. The waters of both are tinged with black. The Greek poets call this river *the black Cocytus, echoing with groans*. It encircles the region of Tartarus, and is composed of the tears of the damned.

According to mythology, Cocytus is the son of Styx, and father of Phlegethon and Menthe. Pausanias advances the following conjecture respecting this river:—"At Cichyrus is lake Acheron, with the rivers Acheron and Cocytas, whose waters are very ungrateful to the taste. Homer, I imagine, had seen these rivers, and, in his bold description of hell, gave to the streams in it the names of those in Thesprotia."

COD (*gadus*, L. Block.); a genus of fishes belonging to the order *jugulares* (soft-finned, sub-brachial, of Cuvier), distinguished by the following characters:—a smooth, oblong or fusiform body, covered with small, soft, deciduous scales, ventrals attached beneath the throat, covered by thick skin, and drawn out to a point; head scaleless; eyes lateral; opercle not dentated; jaws and anterior part of the vomer furnished with several ranges of moderate-sized, unequal, pointed teeth, forming a card or rasp-like surface; the gills are large, seven-rayed, and opening laterally; a small beard at the tip of the lower jaw; almost all the species have two or three dorsal fins, one or two anal, and one distinct caudal fin; the stomach is sacciform and powerful, the cœca very numerous, and the intestines of considerable length;

they have a large, strong swimming-bladder, frequently dentated or lobed at its borders.

The most interesting of all the species is the *common* or *Bank cod* (*G. morrhua*, L.). Regarded as a supply of food, a source of national industry and commercial wealth, or as a wonder of nature in its continuance and multiplication, this fish may justly challenge the admiration of every intelligent observer. Though found in considerable numbers on the coasts of other northern regions, an extent of about 450 miles of ocean, laving the chill and rugged shores of Newfoundland, is the favourite annual resort of countless multitudes of cod, which visit the submarine mountains known as the *Grand Banks*, to feed upon the crustaceous and molluscous animals abundant in such situations. Hither, also, fleets of fishermen regularly adventure, sure of winning a rich freight in return for their toils and exposure, and of conveying plenty and profit to their homes and employers. Myriads of cod are thus yearly destroyed by human diligence; myriads of millions, in the egg state, are prevented from coming into existence, not only by the fishermen, who take the parents before they have spawned, but by hosts of ravenous fishes, and an immense concourse of other animals, which attend upon their migrations to feed upon their spawn; yet, in despite of the unceasing activity of all these destructive causes, year after year finds the abundance still undiminished, inexhaustible by human skill and avidity, irrepressible by the combined voracity of all the tribes of ocean. This, however, is by no means the sum of destruction to which the species is liable. After the spawn is hatched, while the fry are too young and feeble to save themselves by flight or resistance, they are pursued, and devoured in shoals by numerous greedy tyrants of the deep, and, still worse, by their own gluttonous progenitors, clearly showing that without some extraordinary exertion of creative energy, the existence of the species could not have been protracted beyond a few years. Such, however, is the fecundity with which the All-wise has endowed this race, that if but one female annually escaped, and her eggs were safely hatched, the species would be effectually preserved. This is not so surprising when we recollect that the ovaries of each female contain not fewer than 9,344,000 eggs, as has been ascertained by careful and repeated observation.

Few members of the animal creation contribute a greater mass of subsistence to the human race; still fewer are more universally serviceable than the cod-fish, of which every part is applied to some useful purpose. When fresh, its beautifully white, firm and flaky muscles furnish our table with one of the most delicious dainties; salted, dried, or otherwise conserved for future use, it affords a substantial and wholesome article of diet, for which a substitute could not readily be found. The tongue, which is always separated from the head when the fish is first caught, even epicures consider a delicacy; and tongues, salted or pickled along with the swimming-bladders, which are highly nutritious, being almost entirely pure gelatine, are held in much estimation by housekeepers, under the title of *tongues and sounds*. The sound or swimming-bladder of codfish, if rightly prepared, supplies an isinglass equal to the best Russian, and applicable to all the uses for which the imported is employed. The liver of the cod, when fresh, is eaten by many with satisfaction, but it is more generally reserved, by fishermen, for the sake of the large quantity of fine limpid oil which it contains. This is extracted by heat and pressure, and forms the well-known *cod-liver oil* of commerce, which, in many respects, and for most uses, is superior to the commonly used fish-oil. The heads of cod fish, after the tongues are cut out, and the gills are saved for bait, are thrown overboard, on account of want of room, and because salting would not preserve them to any advantage. Yet the head, being almost entirely composed of gelatine, is, when fresh, the richest, and perhaps the most nutritive part of the fish. The fishermen, it is true, makes use of it for their own nourishment, but the great mass is thrown into the sea—a circumstance we can scarce reflect upon without regret, when we remember how many poor, in various charitable institutions, and through the country generally, might be luxuriously fed with the waste. If vessels were provided with the requisite implements and fuel, these heads would furnish a large amount of strong and valuable fish-glue or isinglass, that would well repay the trouble and expense of its preparation. The intestines of the codfish also yield a tribute to the table; the French fishermen, especially, prepare from them a dish somewhat similar, and not far inferior, to the sounds. Finally, the ovaries or roes of the females are separated from their membranes, and the eggs, nicely pickled, afford an agreeable and gustful relish, far more delicate and inviting to the palate than the celebrated Russian caviare. In addition to these usual modes of employing the different parts of our fish, the Norwegians, Icelanders, and Kamtschadales pound up the backbones and other refuse parts, for the purpose of feeding their dogs and other domestic animals during the winter. Strange as such a diet may appear, it is stated as a well established fact, that cows, fed upon these pounded bones, mingled with a small quantity of vegetable matter, yield a larger supply and a better quality of milk than those supported upon more ordinary provender.

The usual mode of preserving codfish for commercial purposes is by salting them immediately after they are caught, having first removed the head, bowels, &c. Those which are carefully selected and salted with greater attention to their whiteness, are usually called dunfish, and bring a better price than such as are salted in bulk, with little regard to the discolouration caused by imperfect washing and draining before being packed. Where facilities are afforded for drying, by an adjacent shore, or by the construction of the vessel, cod are cured by drying alone, or with a very small quantity of salt. This process requires several days' exposure to sun and air, and, when skilfully conducted, keeps the fish, for an indefinite period, in a very desirable condition of whiteness and freshness, both peculiarly advantageous to the appearance of the fish at respectable tables. Cod thus cured are called stock-fish, and before being cooked, require to be softened, by soaking in water and pounding with a wooded mallet.

The spawning season, on the banks of Newfoundland, begins about the month of March, and terminates in June; consequently the regular period of fishing does not commence before April, on account of the storms, ice, and fogs; and indeed, many fishermen consider the middle of May as sufficiently early. After the month of June, cod commence their migrations to other quarters, and, of course, the fishing is suspended until the ensuing season. During the months of April and May, fresh cod, of several species, are caught, in considerable abundance, on the Atlantic coast of the United States, as far south as the capes of Delaware, and perhaps still more to the southward. At this season, the markets of this country are, for a short time, supplied with this fine fish. The inhabitants of the north-eastern cities, being near to the great fisheries, and employing vessels built for the conveyance of live fish, are liberally provided with all the luxuries obtainable from this great gift of Providence.

The common or Bank cod (*cabeliau* or *morue*) varies in size and weight according to its age and the season of the year. The average length is about two and a half or three feet, and the weight between thirty and fifty pounds. Single cod have been caught weighing three times as much, measuring five and a half feet in length; but such specimens are uncommon, the greater number approaching the average above given. The colour is a yellowish-grey on the back, maculated with yellowish and brown; the belly white or reddish, with golden spots in young individuals. The fins are yellowish, with the exception of the anal, which are greyish; the head is large and flattened, with an enormous gape to the month; the upper jaw projects beyond the lower, which has a cirrhus or beard about the length of a finger; the eyes are very large, and veiled by a transparent membrane; the scales are of large size; first ray of the first anal fin, not articulated and spinous.—Professor Mitchell, in his interesting paper on the fishes of New York, enumerates ten species of cod among the supplies brought to the market of that city, caught on the coasts adjacent. To his valuable researches, published in the first volume of the New York Philosophical Transactions, the reader may advantageously refer, who desires to be intimately acquainted with the distinctions by which these species are discriminated. They are named as follows:—*Gadus morrhua*, Bank cod; *G. callarias*, dorse cod; *G. tomcodus*, tomcod; *G. æglefinus*, haddock; *G. blennoides*, blennoid cod; *G. purpureus*, New York pollock; *G. merluccius*, hake; *G. tenuis*; slender cod; *G. longipes*, codling; *G. punctatus*, spotted cod. The whole process of cod-fishing is highly interesting, but the briefest description of it would require far more space than can be afforded here. The importance of this fishery, and the great national interests which it involves, has made it a fruitful source of diplomatic discussion, and led to the establishment of various regulations, to which all are obliged to conform who participate of its advantages. It is obviously out of our power satisfactorily to treat of these topics, and all the interesting matter connected with the subject, in an article solely designed to give a general sketch of the characters of the genus, and of the most interesting species of cod.

COD, CAPE. See *Cape Cod.*

CODE, in jurisprudence, is a name given, by way of eminence, to a collection of laws. (For the derivation of the word, see *Codex*. For the different parties among the lawyers of our times, respecting the advantages of codes and codifying, see *Law*. For the different codes of modern times, see the respective countries, and the following list.)

CODE NAPOLEON. See *Codes, les Cinq.*

CODE OF FREDERIC, CODEX FREDERICIANUS. See *Prussia, Code of.*

CODE OF JUSTINIAN. See *Civil Law.*

CODES, Les Cinq (*French*; the five codes); the new French digests of laws. The civil code (*Code civil*) or general law of the country, the commercial code, the penal code, the codes of civil and criminal procedure, form together a whole, which, whatever may be their absolute value, will remain a perpetual monument of the state of things in France which proceeded from the revolution, and particularly of Napoleon's administration. They originated from the spirit of the times and of the nation; and are, in some respects, the key-stone of the revolution, as they secure, in a great measure, its reasonable demands. Like all human works, they are chargeable with imperfection, and they have been criticised with severity by some political parties and some learned works. See Savigny *Von dem Beruf unserer Zeit zur Gesetzgebung*, 1816.—On the Aptitude of the present Age for Legislation and Jurisprudence; translated from the German of F. C. von Savigny, by a Barrister of Lincoln's Inn. Yet, compared with the preceding condition of jurisprudence in France, they must be acknowledged by all to have been a great and undeniable benefit to the country, as well as to the age in which they were produced. The laws in France, before the revolution, were in a state of the greatest confusion. The Roman or civil law was universally in force as subsidiary to the local customs, and was applied, particularly, to the regulation of contracts. But with regard to the rights of property of married people, the modifications of landed property, feudal rights, &c., the greatest differences prevailed in different parts of the kingdom. The invasions of the German tribes must have effaced, in a great measure, with the Roman law, the last traces of the ancient laws of the Gallic nation; and that more or less completely, according to the degree to which the Roman constitution had taken root among the ancient inhabitants, and to the political importance which they themselves maintained under their new masters. Hence, in the northern parts of France, and under the dominion of the Franks, the Roman institutions were more generally supplanted by the German, than in the south, nearer to Italy, where the country was more populous and under the dominion of the Visigoths and Burgundians. Here some portions of the Roman municipal and judicial institutions had always been preserved; the civil law, particularly, as it was contained in the collection of Theodosius II., remained valid, especially with regard to the rights of property between married people. The provinces where it thus continued in force were called *pays du droit ecrit*. The many *droits coutumiers* of different districts, baronies and counties which were to be found in France, even in the *pays du droit Romain*, originated when the authority of a general government had given place to feudal anarchy, when every barony and every city formed an independent whole, and the king was nothing but the first among the great feudal lords of France (the dukes of Normandy, Aquitaine, Burgundy and Brittany, the counts of Champagne, Flanders, Provence, &c.), and, in his own domains, scarcely more than the first among the inferior barons. In each of these divisions, a particular system of law developed itself in the struggle of the old, free municipal institutions with the usurpations of the barons, in which the former perished entirely. The peculiarities of these different laws, however, proceeded less from the true wants and the spirit of the nation, than from accidental circumstances and events. It must, however, be acknowledged, that the laws of the provinces or ancient principalities of the realm, which were founded partly on express provisions adopted by the sovereign in unison with the states, are of greater importance. Among these, the laws of Normandy are of the most consequence, since they are, at least with regard to the feudal rights and the general principles of landed property, the foundation of the whole English law. See Houard's *Traite sur les Coutumes Anglo Normandes*, Dieppe, 1776, 4 vols., 4to. William I. made the feudal law of the Normans the predominant law of England, and founded the different branches of his government on feudal principles; even the language of the courts of justice and of the official papers of the government in England remained French for centuries; and French formulas are still used in parliament and in legal language, though sometimes singularly perverted. After the law of Normandy, the customs and statutes of the city and county of Paris were of chief importance, since they served as a model for many others, and were considered, in some measure, as a subsidiary source of law in the jurisdic-

tion of the parliament of Paris. Some of these particular systems of law had been reduced to writing in very early times; for instance, the *Etablissements de St Louis*, which were in force in the royal baronies, and were revised by Louis IX., and the *conseils* of Peter Desfontaines, of the 13th century. Besides the general privileges of the cities, particular municipal laws were sometimes granted. See examples in the great collection of royal ordinances, begun by Laurière, 1723. Most of these particular laws, however, were preserved only in the memory of the inhabitants and of the judges, and were, consequently, very uncertain in their application. Therefore, after Charles VII. had driven the English from the French territory, it was decreed in the assembly of the states, 1453, that all customary laws should be reduced to writing. The inhabitants were first questioned as to the law in use (by tens, or *per turbam*) until it was believed that sufficient certainty was obtained: the laws were then arranged by men learned in the law, examined in the council of state, and confirmed by the king. This operation continued almost a hundred years, and produced several hundreds of such particular systems, the most complete collection of which, containing more than 400, was made by Bourdot de Richebourg (*Coutumier général*, Paris, 1724, 8 vols., folio). Besides this mass of particular laws, some general laws were passed. The first and second dynasty promulgated *capitularia*, with the consent of the nation. But the third dynasty, as we have already observed, was not only obliged, in the time of feudal anarchy, to grant complete independence and sovereignty to the great vassals and lords of the kingdom (*pays hors l'obeissance du roy*), but even the inferior barons, the king's particular vassals, who had been enfeoffed by him out of his own domains, made themselves almost entirely independent. The legislative power of the king could, therefore, at first, he exercised only by granting privileges to the cities, by which the power of the barons was limited, to the advantage not only of the citizens, but also of the crown. From the time of Philip Augustus (1180—1223), it became an established principle, that the king could unite vacant fiefs of the kingdom with his hereditary domains, as crown lands; and one of the first acquisitions of this kind was the duchy of Normandy. The great power which thus accrued to the king was so much strengthened by the address and personal authority of Louis IX. (1226—1270), that he was enabled to make general laws, partly with, partly without, the consent of the barons. These were called *ordonnances*. They were in force, however, only in the hereditary domains of the king: the great barons exercised an equal legislative power in their own territories. After almost all these fiefs had been united with the crown, excepting some small sovereignties, as the principalities of Dombes, Orange, Bouillon, the counties of Avignon and Venaissin; and after the marriage of king Charles VIII. with the daughter and heiress of Bretagne, the authority of the *ordonnances* extended over the whole kingdom. At the same time, the royal power approached that absoluteness, which was prepared under Richelieu by the entire subjection of the nobles, completed under Louis XIV., and the abuse of which under Louis XV., produced the revolution. Among the *ordonnances* of this period, are distinguished those on jurisdiction and the order of procedure, in which France was then in advance of the rest of Europe. The more ancient refer to local subjects, and the connexions of the church with the state. To the former belong the *ordonnances* of 1446 and 1453, and that of Villers Cotterets (1539), which was almost contemporaneous with the law of criminal procedure of Charles V., in Germany, and introduced the written trial instead of the usual irregular and tumultous process, which was different in every *seigneurie*. Its author was the chancellor Guillaume Poyet, from whom it was also called *Guillelmine* We might also mention the *ordonnance* of Orleans, (1560), the *ordonnance* of Blois (1579), and others. None of these *ordonnances*, nor any collection of them, bore the name of *code*. The earlier incomplete collections of them (a systematic one was first made by Fontanon, 1611, 4 vols. folio; a chronological one by Neron and Girard, 1620, 4 vols., folio) were superseded by that published by the chancellor Pontchartrain, the first volume of which, edited by De Laurière, appeared in 1723. The work has been continued by Secousse, Villevaults, Bréquigny, Camus, and Pastoret, 1816, 18 vols., folio. It is to be concluded with the reign of Francis I. Henry III. intrusted the systematic arrangement of the *ordonnances* of his predecessors to the famous Brisson, who published them under the name of *Code Henri* or *Basiliques*, though they acquired no legal authority. Under Louis XIII. (1629), an express *ordonnance* respecting the judicial procedure, and other subjects, which had furnished matter of complaint to the states, was sketched, in 461 articles, by the chancellor Michael de Marillac, but was not acknowledged by the courts, as it was not registered. It was called *Code Marillac* or *Code Michau*; and, in later times the name *code* has been applied to several private collections of the *ordonnances* of a certain period (for instance, *Code Louis XV.*, by Chaussepierre, containing the *ordonnances* from 1722 to 1740, 12 vols., 12mo; or relating to single objects, *Code noir*; *Code des Cures*, Paris, 1780, 4 vols., 12mo.; *Code penal*, by l'Averdy, 1777, 12mo, &c.), but never as a legal designation. The government of Louis XIV. was distinguished for its legislative activity. Comprehensive *ordonnances*, or rather real codes of law, appeared on the civil process (1667), on the criminal process (1670), on commercial law (1673), on the forest law (1669), on the marine (1681), and on ecclesiastical jurisdiction (1695). The most important *ordonnances* of Louis XV. relate to donations (1731), wills (1735), and substitutions (1747). In this state of things, the great diversity in the existing laws was as burdensome as it was revolting to reason. It would betray but a superficial acquaintance with history, to suppose that such a diversity of laws could exist without great disadvantages. It retards the development of the science of law, as it requires the study of many accidental details, rather than of the general principles of universal right, by which the Roman law has attained its high perfection. It is also a very injurious check to civil intercourse, and a source of insecurity and loss to those who enter into any legal connexions with the inhabitants of other provinces. Nothing contributes more to promote the internal intercourse of a nation, the foundation of its greatness, than uniformity of laws. Hence the reduction of those 400 particular systems of customs into one civil code, was one of the things most desired by the French nation; and Napoleon, after having restored peace, and settled the subject of ecclesiastical relations, could think of nothing which would contribute more to promote his popularity and the good of France, than the execution of this project, which had been attempted in vain during the revolution. The emperor himself remarked at St Helena, that he considered the code which bears his name to be the best monument which he had erected for himself. The abolition of so many systems of law, of the feudal privileges, of the family trusts, of the indivisibility of the fiefs, made the preparation of a general civil code possible, and even necessary, which was acknowledged as early as in the first constitution

of 1791. Yet the three projects of Cambacéres, then deputy, afterwards second consul, and finally grand chancellor of the empire, in 1793, and 1795, did not meet with approbation. The code of civil law was prepared with the greatest care; its defects must, therefore, be attributed to the then state of legal science in France. The restoration has caused no essential changes in it, but only deprived it of its name, *Code Napoléon*. A new official edition was prepared in the *Bulletin des Lois* (vii. ser. ii. 109), in which, however, nothing but the expressions referring to Napoleon and the imperial constitution was changed. A similar alteration had been made by Napoleon when he assumed the imperial dignity. The only essential change in the civil code down to the present time, is the abolition of the law of divorce, which, contrary to the principles of the Catholic church, had been made entirely free during the revolution, but had been subjected to some restrictions during the reign of Napoleon. If we leave out of the question ecclesiastical considerations, and examine the subject only in a moral point of view, there can be no doubt that the sanctity and moral dignity of matrimony are better secured by declaring it dissoluble, under certain circumstances and with the observance of proper restrictions, than by increasing the mutual dislike of the parties, by making the bond indissoluble, preserving thus the appearance only, and not the essentials of marriage. Next to the code of civil law, the code of criminal procedure is particularly the creation of the spirit of the time. The criminal *ordonnance* of 1670, by its severity (allowing a double torture, the *question preparatoire*, to compel confession, and the *question prealable*, before the execution, to discover the accomplices), but still more by the manner in which it was administered by the tribunals, had excited universal indignation. The ambition of the higher courts, which aspired not only to the securing of independence for the judicial authority, but also to political influence; the pride of the judges in their infallibility, and the *esprit du corps*, united the higher and lower courts in endeavours to conceal and defend their errors. The principle that confession was not necessary for condemnation, but that circumstantial evidence alone was sufficient (the exclusion of which was the chief trait of the German code of criminal procedure of 1532), was accompanied by many revolting abuses, and the execution of innocent persons—Lebrun, Langlade, Calas, Sirwen, Montbailli, Labarre, Lally, and others. The authority of Beccaria and Voltaire, and the example of the English criminal law, eulogized by Montesquieu and his disciples, were instrumental in bringing about a better state of things. The abolition of torture, the complete reform of the criminal courts and procedure, was one of the first objects of the revolution. The courts were modelled on the plan of the English, juries were introduced, and an order of criminal procedure (Sept. 29, 1791), which was followed (Oct. 6) by a penal code, and (Oct. 21) by a complete *instruction* on criminal procedure, was among the labours of the constituent assembly. Though several changes have been made in the later laws on criminal procedure, in the *Code des Délits et des Peines* of Oct. 25, 1795, and in single ordinances (see Dupin's *Lois criminelles extraites de la Collection du Louvre et du Bulletin des Lois*, Paris, 1821), nevertheless the rule requiring, after a preliminary written trial, oral process and the verdict of a jury, remained unaltered, and was preserved in the *Code d'Instruction criminelle* of Napoleon, of Nov. 27, 1808. Still a general dissatisfaction prevails in France in regard to this branch of the law, particularly as it is thought that too much influence is left to the officers of government in the choice of jurymen. Among many writings against the French criminal law, some are very distinguished (for instance, Berenger *De la Justice criminelle en France*, Paris, 1818; Dupin's *Observations sur plusieurs Points importans de notre Législation criminelle*, Paris, 1821). A greater conformity with the English law is wished for by many, and is, of course, much opposed by another party. The penal law (*Code penal*) of the 22d of Feb., 1810, is a modification of the earlier code of the 8th Oct., 1771, and of the *Code des Délits et des Peines*, of the 25th Oct., 1795. Before the revolution, there was no penal code, but disconnected ordinances, and a theory constructed chiefly on the Roman law, which, with some mitigations of its severity in particular cases, is also the foundation of the modern codes. The penal code has also been repeatedly attacked; the codes being, of course, among the most prominent subjects of party controversy. (Bavoux, in his *Leçons Préliminaires sur le Code pénal*, Paris, 1821.) The code of civil procedure (*Code de Procédure civile*) of April 24, 1806; is only a new version of the ordinance of procedure of 1617, resting on the same basis. The accusation, answer, replication, and the statement of the points at issue, are managed by the advocates, without the interference and direction of the court. Written evidence is required by the laws; but the insufficiency of this kind of proof is supplied by the liberty of demanding from the opposite party, at every stage of the process, an explicit statement respecting facts and circumstances (*interrogation sur faits et articles*). This statement has the same force, and is subject to the same conditions, as if delivered on oath. The last declaration of the parties is made verbally before the court, and, according to rule, is followed immediately by the judgment. The basis of this process is the same as that of the German in earlier times, particularly before 1654, until the courts were obliged to examine the accusation and defence, and the last oral process was changed into a written one. The *Code de Commerce*, of the 20th and 21st September, 1807, is a modification and extension of the above mentioned ordinances of 1673 and 1681, on commerce and navigation. These five codes have had a number of commentators and editors. They are founded on the basis of usage and experience, though it is evident, at least in the civil code, that it has been an object to avoid the particular and incidental, and to establish general principles. The ancient laws of France are as indispensable for their illustration as the history of their origin, the projects, the observations of the courts and of the tribunate, the discussions in the council of state, and the speeches in the legislative body. Most of these materials are printed. At the same time, the history and study of the French codes are indispensable for a right understanding of the French revolution, its real character and tendency, as well as of the extraordinary man whom it produced. It is worthy of notice, that, in the discussions of the articles of the codes, we find the consul Bonaparte, who usually partook in the discussions, inclining, generally, to the milder side. Besides the official editions, we have several editions of single codes, and of the five codes together, of which two deserve to be particularly mentioned, as they contain, at the same time, useful annotations and additions: *Les Cinq Codes, annotés par Sirey* (1818, 5 vols. 4to.); and, as a manual, *Manual du Droit Français, contenant la Charte Constitutionnelle et les Cinq Codes*, etc., *par Pailliet* (Paris, 5th edit., August, 1821, 4to and 12mo). The history of the French law has been given by Fleuri of Silberrad (in his edition of Heineccius's *Hist. Jur.*), and by Bernardi (*De l'Origine et des Progrès de la Legislation Française:* Paris, 1818). The *Code Forestier*, or

the collection of laws respecting the administration of the woods, those belonging to cities, villages, &c. as well as those of the king, was published Aug. 1, 1827, under Charles X. It is to be found, with the *Charte Constitutionnelle*, the five codes, &c., in a very convenient edition, the title of which runs thus: *Les Six Codes, avec Indication de leurs Dispositions correlatives et Rapports entre eux, augmentés de la Charte Constitutionnelle, du Tarif des Frais de Justice, de la Loi sur le Sacrilége; d'un Choix des autres Lois, Décrets, Ordonnances, formant le Complément de la Legislation civile, commerciale, et criminelle, et d'une Table des Matières*; *Paris, Froment et Lequien*, 1828. Though this title speaks of the *Six Codes*, the five first given are of course considered as constituting one whole.

Having given, in the preceding paragraph, the general history of the Five Codes, we shall offer here a brief outline of the particular history of the *Code Napoleon*, or, as it is now called, *Code civil*. One of the first labours of Bonaparte, when consul, was, to give France a code. By a consular decree, dated 24th of Thermidor, year 8 (Aug. 12, 1800), a committee was instituted "to compare the order which had been followed in the preparation of the *projets* for a civil code hitherto published, to determine the plan which the committee shall think best to adopt, and to discuss the chief principles of civil legislation." Portalis, Tronchet, Bigot-Preameneu, Maleville, and the minister of justice, formed this committee. Portalis and Maleville were of the *pays du droit écrit*. *See the preceding paragraph.* In the following year, 1801, these commissioners reported a draft of a civil code, which was, in the first instance, submitted to the court of cassation (of errors; see *Cassation, Court of*) and the various courts of appeal. With the reports of the judges of these courts the draft was submitted to the council of state, over which the consul Bonaparte presided, and in which every part was thoroughly discussed. In the work entitled *Conference du Code civil, avec la Discussion particulière du Conseil d'Etat et du Tribunat*, &c., 8 vols. 12mo, Paris, 1805, a detailed and very carefully prepared report of these discussions is contained. Each article, after having been discussed in this body, was presented to the tribunate, where it underwent another discussion, and was returned to the council of state as adopted, rejected, or amended. In this way, the five codes, already mentioned, were successively produced. The *Code civil* was called, by way of eminence, *Code Napoleon*. It is divided into 2281 paragraphs, which are numbered, and consist of a few lines each. The work is divided into three books (*livres*); each book into a certain number of titles; each title is comprised in one or more chapters. A preliminary title, "On the Publication, Effects, and Application of the Law in General," precedes the whole. The first book is entitled "Of Persons," and, in eleven titles, treats, 1. of the enjoyment and privation of civil rights; 2. of civil acts, such as the registry of births, marriages, and deaths; 3. of domicil; 4. of absentees; 5. of marriages; 6. of divorce; 7. of the relations of father and son; 8. of adoption and officious guardianship; 9. of the paternal power; 10. of minority, guardianship and emancipation; 11. of majority, of guardianship of persons of age (interdiction) and judicial counsel. The second book is entitled "Of Property and the different Modifications of Ownership," and in four titles, treats, 1. of the distinction of property into real and personal (*immeubles et meubles*); 2. of ownership; 3. of usufruct, of use and habitation; 4. of servitudes (easements; *des servitudes ou services fonciers*). The third book is entitled "Of the different Modes of acquiring Property," and, in twenty titles, treats, 1. of successions; 2. of donations *inter vivos* and testaments; 3. of contracts, or conventional obligations in general; 4. of engagements formed without a convention; 5. of the contract of marriage, and the rights of the parties respectively; 6. of sale; 7. of exchange; 8. of the contract of letting to hire; 9. of partnership; 10. of loan; 11. of deposit and sequestration; 12. of contracts connected with chance (*aleatoires*, such as wagers and life-rents); 13. of powers of attorney; 14. of becoming security; 15. of transactions; 16. of bodily duress in civil cases; 17. of furnishing security; 18. of mortgages; 19. of taking and setting off by execution; 20. of prescriptions. It would be necessary to give the heads of the chapters also, in order to present a clear view of the code, but our limits do not permit it. The work already quoted, *Conference du Code civil*, is indispensable to a complete understanding of the code, because it gives the history of each law. It first presents each article in the code, as finally adopted. Next follow the different forms and draughts of each article discussed in the council of state, with the report of the discussions. To this succeed the observations made in the section of legislation of the tribunate. We learn, from this work, how active a part Napoleon took in the formation of the code, as his remarks are given as well those of the others, and he was present during almost the whole of the debates. By the conquests of the French, the *Code Napoleon* was introduced into Holland, the kingdom of Westphalia, the kingdom of Italy, of Naples and Spain, and the dukedom of Berg. It had much influence, moreover, on the administration of justice in several smaller countries, as Baden; but it has nowhere, out of France, retained the authority of law, since the overthrow of Napoleon, except in the Prussian dominions on the left bank of the Rhine, and in some parts of the kingdom of the Netherlands: in the former, however, the government intends to introduce the Prussian code. In America it has served as a model to the Code of Louisiana and the *Code Henri*. See *Louisiana*, *Code of*, and *Christophe*.

CODEX; with the ancients, that part of the wood of a tree next to the bark. Before the invention of paper, wooden tablets, covered with wax, which were written on with the style, and put together in the shape of a book, were called *codex*. The word was afterwards retained, in times when paper was used for writing, to denote a large book. Thus, important works, particularly old manuscripts of poets, historians, &c., which had been preserved, were called *codices manuscripti*. (See *Manuscripts*.) In like manner, a collection of laws was called *codex*, with the addition of the name of the sovereign under whom it had been compiled, as *Codex Carolinus*, *Code Napoleon*.

Codex rescriptus (*Latin*; a re-written codex). This name is given to ancient manuscripts, which, in the middle ages, were used, after the original writing had been in a great measure effaced, for the copying of other works, generally ecclesiastical treatises. Thus the Institutions of Gaius, recently discovered by Niebuhr, at Verona, are a *codex rescriptus*. Some skill is required to read the ancient letters under the others. The Greek name for *codex rescriptus* is *palimpsest* (q. v.), now more frequently used. The Holy Scriptures themselves have been sometimes effaced, to make way for homilies and legends. One of the oldest manuscripts of the Bible, described by Wetstein, in his preface to his New Testament, as number C, is a *codex rescriptus*.

CODEX ALEXANDRINUS. See *Alexandrian Copy*.

CODICIL, in law; a supplement to a will, to

be considered as a part of it, either for the purpose of explaining or altering, or of adding to or subtracting from the testator's former disposition. A codicil may be annexed to a will, either actually or constructively. It may not only be written on the same paper, or affixed to or folded up with the will, but may be written on a different paper, and deposited in a different place. If intended to effect a devise of lands, it must go through the forms required by the statute of frauds; but, to a will of personal estate, it may be either written or nuncupative, provided, in the latter case, it only supplies an omission in the will.

CODRUS, son of Melanthus, was the seventeenth and last King of Athens. During his reign, Attica was attacked by the Dorians, or, according to some, by the inhabitants of the Peloponnesus, or the Thracians. The assailants, on inquiring of an oracle what would be the result of their incursion, received for answer that they would be successful if they avoided killing the Athenian king. Codrus, becoming acquainted with this answer, resolved to sacrifice himself for his country. He disguised himself in a peasant's dress, entered the enemy's camp, provoked a quarrel with the soldiers, and was slain. The Athenians, upon hearing of this, sent a herald to demand the body of their king. The courage of the assailants was so damped, when they became acquainted with the circumstances, that they retired without striking a blow. In honour of their patriotic monarch, the Athenians now abolished the royal dignity, esteeming no one worthy to be the successor of Codrus. They also used his name as a common term to express a man of distinguished excellence.

COEFFICIENTS, in algebra; figures put before the letters, to indicate how many times the letter is to be added to itself. Thus 4 *a* signifies $a+a+a+a$. If the coefficient is indefinite, it is expressed by a letter, as *b a*.

COEHORN, Menno, baron of; an engineer; born, 1641, near Lewarden, in Friesland. His father, a distinguished officer, early instilled into him an inclination for military science, which he studied thoroughly. In his sixteenth year, he entered the service as captain. He distinguished himself at the siege of Maestricht (1673), and at the battles of Senef, Cassel, St Denis, and Fleurus, and soon rose to the rank of a colonel. In 1675, not having received the command of a regiment, which had been promised him, he negotiated with Louvois for entering into the French service. The prince of Orange, however, detained his wife and eight children as hostages, and thus obliged him to return, and secured his attachment by acts of favour. In the war of 1689, against France, he again distinguished himself. His defence of fort William, in 1692, which he himself had planned, against the attacks of Vauban, attracted much attention. Both commanders displayed all their talents. Coehorn was finally wounded, and had but 150 men left able to do duty, when he surrendered the fort, June 23, 1692. In 1702, he destroyed the French lines near St Donat. In the same year, he published at Lewarden his new theory of fortification. In 1703, he directed several sieges. In 1704, Marlborough invited him to the Hague, to concert a plan of operations, where he died, March 17, 1704. Coehorn was a man of good principles, and honourable feelings and habits. He fortified almost all the strong places in Holland. Bergen-op-Zoom he considered his masterwork. His system, and that of Vauban, are entirely different. Vauban operated by manœuvres, and, by the skilful direction of his ordnance and his men, saved both, and wearied and divided the forces of the enemy; Coehorn crushed by an overpowering mass of artillery and of men, and sacrificed both for a rapid and powerful effect. Vauban's manœuvres were founded on calculations which are always in one's power; Coehorn founded his on superiority of force, which is not always at the disposal of the combatant. His system, however, is well deserving the study of the military engineer.

CŒLIUS, Mons (now *Monte Celio*); one of the seven hills of Rome, so called from an Etruscan leader, *Celes Vibenna*, who dwelt there. It gave its name to a part of Rome, called *Cœlimontium*, or *Cœlimontana*, the valley between the Mons Cœlius and Mons Esquilinus. The Palatine was on the west, the Esquiline on the north of the Mons Cœlius. There were five temples on this hill. At present, the church of the *SS. Quattro Coronati* stands on the top of the hill. See *Rome*.

CŒNOBITE. See *Anchorite*.

COFFEE is the seed of an evergreen shrub, which is cultivated in hot climates, and is chiefly imported from Arabia and the East and West Indies. This shrub (*coffea Arabica*) is from 15 to 20 feet in height. The leaves are four or five inches long, and two broad, smooth, green, glossy on the upper surface; and the flowers, which grow in bunches at the base of the leaves, are white and sweet-scented. The berries and fruit are somewhat of an oval shape, about the size of a cherry, and of a dark-red colour when ripe. Each of these contains two cells, and each cell a single seed, which is the coffee as we see it before it undergoes the process of roasting.

Coffee is an article of but recent introduction. To the Greeks and Romans it was wholly unknown. It was first introduced into England by a Turkey merchant, named Edwards, in 1652, and his Greek servant, named Pasqua, first opened a coffee-house in London. The first invention of coffee is ascribed to the Persians, who communicated its use and virtues in the 15th century to a mufti or Mohammedan priest, at Aden, on the Red sea, who having found that its use cleared the intellect, was exhilarating, and gently opened the bowels, and at the same time prevented drowsiness, recommended first its use to his dervises, with whom he passed the night in prayer. From Aden it was communicated to Mecca, where first the pilgrims, or Hadgis, and then the rest of the people, adopted it; and from Arabia it passed over to Grand Cairo in Egypt, where, in 1511, its use was prohibited, from a belief that it was intoxicating and inclined to things forbidden by the Alcoran. But the sultan Causon having removed the prohibition, the use of coffee passed along the coast of Syria to Constantinople. Here the dervises attempted to raise a clamour against it, by quoting from the Alcoran that coal is not of the number of things created by God for food. Accordingly, the mufti ordered all the coffee-houses to be shut up, but his successor declaring that coffee was not *coal*, they were again opened. During the war in Candia the coffee-drinkers and news-mongers having made too free with politics, the grand vizier Cuproli suppressed the coffee-houses in Constantinople. However at the present day the Turks indulge immoderately in the use of coffee. There is a sort of coffee used in Turkey not known in this country, which they call the *Sultan's coffee*, from being used in the seraglio, and being much less heating, while it at the same time gently relaxes the bowels. This coffee is made from the external drupes or fleshy pods, which is found not to bear a sea voyage, and is never imported into Europe. The berries alone are known in England, where the liquor, on its first introduction, was called the sirup of Indian mulberries.

The berries, as is well known, are roasted over a charcoal fire, in a revolving iron cylinder, previous to being used; they are then ground in a mill. But

in Turkey they are pounded in large marble mortars to an impalpable powder. The Turks, too, never take sugar or cream with their coffee, and use no pains to purify it from the sediment, drinking it very strong and in small quantities frequently during the day and night.

As to the effects of coffee on the human body, it is believed to be slightly astringent and antiseptic, moderating the fermentation of food in the stomach, whereby it assists digestion, and is powerfully sedative. But in delicate and irritable nervous people, it often occasions watchfulness and tremblings. It has even been accused of producing palsies, and should therefore be avoided by such persons as have a tendency to that complaint. Where it agrees, it removes headaches, exhilarates, promotes digestion, and counteracts the effects of opium and narcotics, which is the reason probably that it is so much consumed by the Turks and other oriental nations. It is assuredly one of the best medicines which can be employed in dispelling the fits of periodical asthma. When taken for this purpose, the coffee should be the best kind from Mocha, newly burnt, and made very strong, one ounce in quantity to a dish, and is to be repeated fresh after the interval of the quarter of an hour, and taken without either milk or sugar. This remedy was used for many years by the celebrated Sir John Hoyer, who wrote upon asthma, and was also prescribed commonly by Dr Musgrave of Devonshire.—On the Continent, coffee is much used as a remedy, and is sometimes administered with the addition of ice, which is said to increase its virtues.

Great attention is paid to the culture of coffee in Arabia. The trees are raised from seed sown in nurseries, and afterwards planted out in moist and shady situations, on sloping grounds, or at the foot of mountains. Care is taken to conduct little rills of water to the roots of the trees, which, at certain seasons, require to be constantly surrounded with moisture. As soon as the fruit is nearly ripe, the water is turned off, lest the fruit should be rendered too succulent. In places much exposed to the south, the trees are planted in rows, and are shaded from the otherwise too intense heat of the sun, by a branching kind of poplar-tree. When the fruit has attained its maturity, cloths are placed under the trees, and upon these the labourers shake it down. They afterwards spread the berries on mats, and expose them to the sun to dry. The husk is then broken off by large and heavy rollers of wood or iron. When the coffee has been thus cleared of its husk, it is again dried in the sun, and, lastly, winnowed with a large fan, for the purpose of clearing it from the pieces of husks with which it is intermingled. A pound of coffee is generally more than the produce of one tree; but a tree in great vigour will produce three or four pounds.

The best coffee is imported from Mocha, on the Red sea. This kind, which is denominated *Mocha*, and *Turkey coffee*, is of a better quality than any which the European colonists are able to raise, owing, as it is supposed, to the difference of climate and soil in which it grows. It is packed in large bales, each containing a number of smaller bales, and, when good, appears fresh, and of a greenish-olive colour. The coffee next in esteem to this is raised in Java and the East Indies; and that of lowest price, in the West Indies and Brazil. When stowed in ships, with rum, pepper, or other articles, it is said that coffee contracts a rank and unpleasant flavour; and this has been assigned as a reason of the inferiority of that which is imported from the European plantations.

The quantity of coffee annually supplied by Arabia is supposed to be upwards of 14,000,000 of pounds. Before the commencement of the French revolution, the island of St Domingo alone exported more than 70,000,000 of pounds per annum; and, at the present day, such is the fertility of this island, that sufficient coffee is raised to reduce the price greatly in all parts of the civilized world. Almost all the Mohammedans drink coffee at least twice a-day, very hot, and without sugar.

The excellence of coffee depends, in a great measure, on the skill and attention exercised in roasting it. If it be too little roasted, it is devoid of flavour, and if too much, it becomes acrid, and has a disagreeable, burnt taste. In Europe, it is usually roasted in a cylindrical tin box, perforated with numerous holes, and fixed upon a spit, which runs lengthwise through the centre, and is turned by a jack, or by the hand. Coffee is used in the form either of an infusion or decoction, of which the former is decidedly preferable, both as regards flavour and strength. Coffee, as very commonly prepared by persons unacquainted with its nature, is a decoction, and is boiled for some time, under a mistaken notion that the strength is not extracted unless it be boiled. But the fact is just the reverse. The fine aromatic oil, which produces the flavour and strength of coffee, is dispelled and lost by boiling, and a mucilage is extracted at the same time, which also tends to make it flat and weak. The best modes are, to pour boiling water through the coffee in a biggin or strainer, which is found to extract nearly all the strength; or to pour boiling water upon it, and set it upon the fire, not to exceed ten minutes. Prepared in either way, it is fine and strong. There are coffee-machines in which the water is boiled, and the steam penetrates the coffee, and extracts, to a great degree, the fine aroma. Immediately after, the boiling water is poured over it. Thus the best coffee is made. As we have already said, in Europe, coffee is generally roasted in a cylinder; in Asia, however, open pans or tin plates are used, and, if the time allows, a boy is employed, who picks out every bean, when it has reached the right degree of brownness. The same is done by some French people. The second difference in the Asiatic way of preparing coffee is, that they pound the beans, and do not grind them, much preferring the former mode. In Marseilles, we have seen coffee likewise pounded. Whether this is really preferable, we do not venture to decide; but experience has taught us that the Asiatic coffee is, on the whole, much better than the European. The difference is probably owing to the different way of roasting. The Turks and Arabs boil the coffee, it is true, but they boil each cup by itself, and only for a moment, so that the effect is, in fact, much the same as that of infusion, and not like that of decoction. They do not separate the coffee itself from the infusion, but leave the whole in the cup. It improves the beverage very much to roast and grind the coffee just before it is used.

The Turks drink coffee at all times of day, present it to visitors both in the forenoon and afternoon, and the opium-eater lives almost entirely on coffee and opium. Beaujour, in his excellent work on Greece, tells of a *theriacophage* (an opium-eater), who drank more than sixty cups of coffee in a day, and smoked as many pipes. Coffee has been the favourite beverage of many distinguished men. Napoleon and Frederic the Great drank it freely; Voltaire liked it very strong; and Leibnitz drank it also during the whole day, but mixed with more than an equal quantity of milk. The best coffee, in the western part of the world, is made in France, where this beverage is in universal request. In fact, throughout the continent of Europe, it is generally drunk. In England, however, tea is a more common drink, although cof-

fee is coming every day into more general use. This will be apparent from the following table, in which the increase in the consumption of coffee in Great Britain within ten years is very striking, having risen from seven million pounds annually, to twenty-two million pounds. Much of this increase may be attributed to the material reduction on the duty on coffee which took place in 1825. From 1820 to 1824, the rates of duty were on British Plantation coffee 1s per lb.; on East India, 1s 6d, and on Foreign, 2s 6d. From 1825, the rates were reduced to 6d on British Plantation; 9d on East India, and 1s 3d on Foreign coffee. By the reduction of duty, as will be seen, the revenue on coffee has been greatly increased.

TABLE

OF THE CONSUMPTION OF COFFEE IN GREAT BRITAIN, FROM 1820 TO 1831 INCLUSIVE, WITH THE REVENUE DERIVED FROM IT.

Years.	Quantities cleared for Consumption.				Net Revenue.
	British Plantations.	East India.	Foreign.	Total.	
	lbs.	lbs.	lbs.	lbs.	£
1820	6,816,033	285,945	1,431	7,103,409	342,628
1821	7,386,060	206,177	764	7,593,001	384,283
1822	7,494,218	171,717	3,416	7,669,351	367,342
1823	8,218,342	234,697	681	8,454,920	428,613
1824	7,947,890	313,513	1,540	8,262,943	420,983
1825	10,622,376	457,745	2,819	11,082,970	315,809
1826	12,409,000	791,570	2,753	13,203,323	336,570
1827	14,676,968	688,198	1,210	15,366,376	399,690
1828	16,151,239	973,410	2,984	17,127,633	440,245
1829	18,495,407	974,576	6,197	19,476,180	484,975
1830	21,697,966	989,585	3,971	22,691,522	579,363
1831	21,501,966	1,234,721	3,910	22,740,627	583,751

In England and the United States of America, coffee, almost always, is badly made. The coffee-houses in France, it is well known, are places which afford much opportunity for interesting observation. In the south of France, they are still more frequented than in the north. The different *cafes* of the *palais royal* in Paris are famous: the *cafe des mille colonnes* is one of the most splendid. The *cafe des la paix* contains a small theatre. In the *cafe des aveugles*, every evening, blind men and women of the *hospice des quinze-vingts* play and sing. Those coffee-houses, in France, where smoking is allowed, are called *estaminets*, which is also the name of the beer-houses in Holland. One of the greatest attractions in French coffee-houses is the *limonadiere*, a woman who sits in an elevated seat, to attend to the sale of the refreshments. She is generally very pretty, and is dressed with much taste. With genuine French tact, she represses all improper freedoms. The coffee-houses in London are poor.

In the East, the coffee-houses, or rather booths, form a very essential part of the social system; all men of leisure assembling there. In these places are also to be found the famous story-tellers, who repeat long tales to attentive hearers, who show their interest by exclamations of "God save him! Allah deprive him of his eyes!" &c., or utter warning cries to alarm the hero when danger awaits him. It often happens, that the story is broken off, and continued the next day. There is a highly interesting manuscript in the royal library at Paris, in Arabic, entitled the *Support of Innocence*. It relates to the lawfulness of using coffee. The author is Aljeziri Alhanbali. Of this De Sacy gives an account, and extracts in his *Chrestomathie Arabe* (vol. i., p. 441). It appears that a question arose, whether coffee was to be included among the intoxicating beverages which the Koran prohibits; and the manuscript proves that it is not. There are many other interesting matters in these extracts. The sheikh, the writer of the manuscript, proves that the use of coffee was first introduced by a famous skeikh, imam, mufti, and scholar of Arabia Felix, called *Dhabani*, about the year 870 of the Hegira. In Egypt, the drinking of coffee seems to have been at first regarded almost as a religious ceremony. The devotees, who introduced it there, assembled for the purpose of enjoying it on Monday and Friday evenings, when it was handed round with great solemnity, accompanied with many prayers, and ever and anon with exclamations of "There is no God but God!" There are also mentioned, in the manuscript above cited, two different methods of making coffee, one called *buniyya*, in which the grain and husk are used together, and another called *kisharriyya*, in which the husk is used alone. Many sermons against coffee-drinking are extant, written at the time when it was introduced into Europe; as there are also many sermons against smoking. We recollect having read the following passage in an old sermon:—"They cannot wait until the smoke of the infernal regions surrounds them, but encompass themselves with smoke of their own accord, and drink a poison which God made black, that it might bear the devil's colour."

COFFIN. Coffins were used by the ancients only to receive the bodies of persons of the highest distinction. Even at the present time, they are not used in the East, either by Mohammedans or Christians. The modern Jews do not use coffins, but only two boards, between which the corpse is tied. But in Egypt, coffins seem to have been used in ancient times universally. They were of stone, wood, or a kind of paste-board made by gluing cloth together. Coffins among Christians were probably introduced with the custom of burying. See *Burying-Grounds*. It has been often proposed that they should be made with a hole opposite the place of the mouth of the body, so as to allow breathing, in case of revival. Of course, it would be necessary, at the same time, to let the coffin stand for some days in a convenient place, as is the custom in many parts of Germany.

COFRA DE PEROTA; a mountain of Mexico; lon. 97° 8′ W.; lat. 19° 45′ N. It is 13,414 feet above the level of the gulf of Mexico. The Mexican name of this mountain is *Nauhcampapetl*; the English, the *Four parts* or the *Square mountain*. It is evident that the mountain has been a volcano, and is formed of basaltic porphyry.

COGNATES; the relations by the mother's side.

COHESION is that force which preserves in union particles of a similar kind. Its action is seen in a solid mass of matter, the parts of which cohere with a certain force which resists any mechanical action that would tend to separate them. In different bodies, it is exerted with different degrees of strength, and is measured by the force necessary to pull them asunder. According to Sickingen, the relative cohesive strength of the metals is as follows:

Gold,	150,955
Silver,	190,771
Platina,	262,361
Copper,	304,696
Soft iron,	362,927
Hard iron,	559,880

Cohesion in liquids is very much weaker, the parts being disjoined with much more facility; and in substances existing in the aerial form, it is entirely overcome, the particles, instead of attracting, repelling each other.

Cohesion in bodies is weakened or overcome by two general causes—by the repulsion communicated by caloric, or by the attraction which may be exerted by the particles of one body on those of another.

Caloric communicated to a solid body separates its particles to greater distances, as is evident from the enlargement of volume which it produces. By thus increasing the distances, the force with which the attraction of aggregation or cohesion is exerted is diminished; if the heat be carried to a sufficient extent, the cohesion is so far weakened, that the body passes into the liquid form; and, if carried still farther, the attractive force is entirely overcome, re] ul-

sion is established between the particles, and the body passes into the aeriform state.

The same effects are produced by the exertion of that attraction which unites the particles of one body with those of another. If a liquid be poured on a solid, it often happens that their mutual attraction is sufficiently powerful to overcome the cohesion of the solid: its particles are consequently disunited, to combine with those of the liquid, and it entirely disappears. This forms the chemical process of *solution*. A similar effect is sometimes produced by the chemical action of an aeriform body.

When these powers, whether of heat or of chemical attraction, are withdrawn, cohesion resumes its force, but with results which are different, according to the circumstances under which this happens.—When the attraction of aggregation is suddenly and forcibly exerted, the particles are united, in general, indiscriminately, and according to no regular law. If a body, which has been melted, is suddenly cooled to a sufficient extent, it becomes solid, and forms a mass of no regular structure or figure; or, if its cohesion has been suspended by the chemical attraction exerted by another body towards it, and if this attraction suddenly cease to operate, the force of cohesion is resumed, and the solid substance appears in the form of a powder. This latter case forms the chemical operation denominated *precipitation*. But, if the force of cohesion is exerted more slowly, the particles are united, not indiscriminately, but usually with regularity, so as to form masses of regular structure and figure, bounded by plane surfaces and determinate angles. This forms the operation of *crystallization;* and such masses are denominated *crystals*.

Crystallization takes place from fluidity, produced either by heat or by the exertion of a chemical attraction. Ice is an example of the first, which shoots in long, slender crystals, when water is cooled to a sufficient extent; and salts, which, when they have been dissolved in water, separate in crystals, on withdrawing a part of their water by evaporation, or reducing its solvent power by a diminution of its temperature, is an example of crystallization from fluidity, produced by affinity. In either of these cases, if the operation is conducted slowly, so as to admit of the particles uniting by those faces most disposed to union, crystals are formed; and these are, in general, larger, more transparent, and more regular in their form, the slower the crystallization has taken place. The production of these regular forms is favoured by the introduction of an already formed crystal, or of some foreign substance, into the solution, which operates as a nucleus, and upon which the crystallization commences. The access of air and light exerts an important influence, also, on the crystallization of certain salts. An enlargement of volume is often produced by crystallization, as in the examples of ice, of several metals, and of a number of salts; while, in other cases, the reverse is the fact, the volume of the crystallized substance being less than while it existed in the liquid state—differences evidently depending on the mode in which the particles unite.—Crystals formed from a watery solution generally retain a portion of water in a combined state; and this is the case not only with those salts which are formed by the chemist, and in the arts, but with nearly all of the earthy and saline crystals found in nature. This water is named their *water of crystallization*. When deprived of it, they lose their transparency and density. Some part with it from mere exposure to the air, and suffer these changes; they are then said to *effloresce*. If they attract water and become humid, they are said to *deliquesce*. In some salts, the water of crystallization is in such large quantity, that, on the application of a moderate heat, it causes them to melt—a change called the *watery fusion*.—Water, which has dissolved one salt to the point of saturation, will still take up a considerable proportion of a second, and even of a third. Sea-water contains several well-known saline compounds. In such cases, as the salts have different degrees of solubility, they may often be obtained separately, by a gradual evaporation of the water, the least soluble being the first to separate. The water of the ocean, evaporated to a certain degree, yields common salt; evaporated still further, it deposits Glauber's salts, and the remaining liquid holds dissolved a compound containing magnesia.—Crystallization also takes place in the transition from the aerial form, as is well exemplified in the arrangement of a flake of snow. Every substance in crystallizing is disposed to assume a certain regular figure: sea-salt, for example, takes the form of the cube; nitre, that of a prism. Carbonate of lime is found crystallized in rhomboids, a particular class of prisms and pyramids; and garnet in regular dodecahedrons.—The important application, therefore, of this law becomes at once obvious. The form of the crystal, in mineralogy, enables us to determine the species to which it belongs. The same is true of pharmaceutical preparations; their crystalline forms furnish a certain test of the nature of the crystallized body.

The theory of crystallization is still obscure. It may be conceived that the particles of bodies are of certain regular figures, and that in uniting, they may be disposed to approach by certain sides, in preference to others, probably by those which admit of the most extensive contact. Hence a regular structure and figure, uniform with regard to each substance, will be produced. The numerous diversified figures of crystals may be reduced to others more simple; thus the equilateral, six-sided prisms, and the double six-sided pyramid of calc-spar, or carbonate of lime, may be reduced by successive sections (parallel to natural joints in these crystals) to the rhomboid. The figure thus arrived at by mechanical division, and which is supposed to constitute the nucleus of the crystal, is called the primitive form. The number of original forms thus obtained, according to M. Hauy, amounts to six; 1. the regular tetrahedron; 2. the parallelopipedon, which includes the cube, the rhomboid, and all the solids, which have six faces parallel, two and two; 3. the octohedron, the surfaces of which are triangles, and, according to the species, equilateral isosceles, or scalene; 4. the hexagonal prism; 5. the dodecahedron with rhombic faces; 6. the dodecahedron, with triangular faces. — The secondary forms of crystals, or such as are usually exhibited by nature, are supposed to grow out of the primitive forms in the following manner:—The particles first unite to produce the primitive form, and from this proceeds the secondary form by the application of successive layers of particles parallel to its faces; which layers are denominated laminæ of superposition. The modification of figure is the consequence of the abstraction of one, two, or more rows, or ranges of particles, from the planes or angles of each of these laminæ, by which a decreasing series of particles will be formed. Thus, supposing that upon one side of a cube successive layers of cubic particles be placed, and each layer be less, by one range of particles, than the surface upon which it rests, it is obvious that the lines which bound the sides must be continually approaching each other, and that the last layer must consist of a single cube. It follows, then, that a four-sided pyramid will be raised upon one of the surfaces of the cube; and that, if the same thing happen upon the five other sides, the cube must be converted into a dodecahedron, with rhombic

faces. The last figure is then secondary. Its formation has generally been quoted to illustrate the law of decrement, as it has been termed, and it is easy to represent it, although coarsely, by models. "But if," says M. Hauy, "for this kind of rude masonry, which, however, has the advantage of speaking to the eyes, we substitute the infinitely delicate architecture of nature, it will be necessary to conceive the nucleus as consisting of an incomparably greater number of imperceptible moleculæ, and then the number of laminæ of supreposition being itself considerably augmented, while their thickness has become imperceptible, the channel which these laminæ form at their edges will likewise escape our senses." Hence the surfaces of crystals appear to us planes.

The facts which have been discovered, relative to the laws of decrement, are sufficient to prove that an immense variety of crystals may be made to grow out of the combinations of the particles producing the primitive forms, for the decrements may take place on the edges, or parallel with the faces of the primitive forms, on the angles, in which the lines are parallel with the diagonals of the faces, in lines parallel to those which intersect the diagonals and faces, constituting the intermediate decrements, or in a mode which combines, more or less, the decrements already mentioned, and which is, therefore, said to be mixed. These primary decrements may be so modified, as that they shall take place on certain edges or certain angles only; or in uniform and alternate ranges; or from one edge, or one angle to another; or, at the same time, on all the edges and all the angles, &c. Nevertheless, such is the fecundity allied to this simplicity, that, when limited to ordinary decrements, and to form ranges on the edges and the angles of a rhomboid, it may be demonstrated, that this species of nucleus is susceptible of producing 8,388,640 varieties of distinct forms.

COHORT. See *Legion*.

COIMBETORE, or COIMBETOOR; a province of Hindostan, in Mysore, and southern part of the dominions of Tippoo Sultan. The country is separated from the country of Travancore, Cochin, and the Nayrs, by lofty mountains called the *Western Ghauts*; a continuation of which also bounds it on the north. On the east it is bounded by the Carnatic, and south by Dindigul; and it is divided into north and South Coimbetore. It is fertile, producing sugar, cotton, rice, and betel leaf; and well watered by several rivers. The principal towns are Coimbetore, Erroad and Carroor. In 1799, on the death of Tippoo, and the division of his territories, Coimbetore was ceded to the East India company.

Coimbetore; a town of Hindostan, and capital of the province to which it gives name; situated at the foot of the Western Ghauts, on the river Noyel; ninety miles S. Seringapatam, 252 S. W. Madras; lon. 77° 7′ E.; lat. 10° 58′ N.; population, 12,000; houses, 2,000. This city formerly contained upwards of 40,000 inhabitants; but it suffered much by the wars of the British and the Mysore sovereigns. It is now recovering. The exports are tobacco, cotton, thread, cloth, sugar, betel, &c.

COIMBRA (anciently *Coimbriga Coimbrica*); a city of Portugal, capital of the province of Beira, situated on a mountain, near the river Mondego, ninety miles N. N. E. Lisbon; lon. 8°. 25′ W.; lat. 40° 13′ N.: the population was lately given at 15,200; but the disturbances in Portugal have, according to recent accounts, reduced the number much. It is a bishop's see, and seat of the inquisition. It contains a cathedral, seven churches, an hospital and a university. It was built by the Romans, about 300 B. C. The university was originally founded in A. D. 1291, at Lisbon, but was transfe d hither in A. D. 1308, and is now the only one in Portugal. It consists of eighteen colleges with ample funds. The course of study here is divided into six branches, viz. theology, taught by eight professors; canon law, by nine; civil law, by eight; medicine, by six; mathematics, by four; and philosophy, by four. The number of students in 1804, was 1431, and in 1817, about 1400. To the university belong a botanic garden and a library of 40,000 volumes. The aqueduct on twenty arches, is remarkable. The environs of Coimbra produce oil, wine, and lemons. The inhabitants manufacture linen, pottery, earthenware, articles of horn, and wooden toothpicks.

COINAGE, is the art of converting pieces of metal into current coins, for the purposes of commerce. The metals to be coined, having been first melted, are reduced into plates of the requisite thickness, by being passed repeatedly between the steel cylinders of laminating and drawing machines. These thin plates are then subjected to the action of a cutting out press, by means of which they are divided into circular pieces, nearly of the size of the intended coin, in which state they are called *blanks*. These are then carried to the sizeing room, where each individual piece is adjusted to its standard weight. The pieces which are too light, are selected to be again melted; and those which are too heavy, are subjected to the action of a rasp or file. The pieces thus adjusted, being in a state of great hardness, from compression by the rolling and drawing processes, by which all their latent heat had been squeezed out, are again subjected to the action of a clear red heat in a reverberatory furnace, after which they are boiled in very weak sulphuric acid, which makes them perfectly clean. After having been dried either in warm saw dust, or over a very slow fire, they are in a state for the two succeeding processes of milling and stamping. The operation of milling is performed round the edge to prevent their being clipped or filed. The principal pieces of this machine, are two thin steel plates, about a line or the eighth of an inch thick, one-half of the milling or legend, or of the ring, is engraved on the thickness of one of these lamina, and the other half on the other, and these two plates are straight, although the blank or coin to be marked by them is circular. The blanks (or *planchets* as they are also called) are put in between these lamina in such a manner, as that each of them being laid flat upon a copper plate, which is fastened upon a very thick wooden table, and the planchet being likewise laid flat upon the same plate, the edge of the planchet may touch the two lamina on each side, and in their thick part. One of these lamina being immovable, and fastened by means of several screws, the other is made to slide by means of an indented wheel, which is made to receive the teeth that are upon the surface of the steel lamina. This sliding plate makes the circular piece of metal turn round in such a manner, that it remains stamped on the edge, when it has made one turn. Only crown, and half-crown pieces can bear the impression of letters on the thickness of their edges.

The coining engine, or mill, is so constructed, that one workman may stamp 20,000 coins in a single day. Gold, silver, and copper planchets, are all of them coined in a mill, into which the coining squares, or dies as they are called, are fastened. That of the face underneath in a square box, garnished with male and female screws, to fix and keep it steady; and the other above, in a little box furnished with similar screws to fasten the coining square. The planchet is laid flat on the square of the effigy, which is dormant, and the bar of the mill being immediately pulled by its cords, causes the screws set within it to turn. This enters into the female screw, which is in

the body of the mill, and turns it with so much force, that by depressing the upper square upon that of the effigy, the planchet lying between both, being suddenly and violently compressed, receives both the impressions in the twinkling of an eye.

The mode of manufacturing the dies is very curious. An original design is engraven upon a piece of soft cast steel of the size of the money to be coined. The table of the die must be perfectly level or square. The impression is cut into the steel, and its depth is in proportion to the relief, ultimately required upon the face of the coin. When the engraving is finished, the die is then hardened. This is a very nice process, and requires considerable care to perform it. The die is put into a cast iron pot, completely embedded in animal charcoal, chiefly made from leather. The pot is placed in an air furnace, in which coke or charcoal is burned, which gives a steady and uniform degree of heat. The die having endured its proper degree of heat, is withdrawn from the furnace, and plunged into a large cistern of cold water, into which a stream is constantly kept flowing. If the steel, as sometimes happens, is faulty, or heated to excess, it will fly to pieces, and all the artist's labours be lost. If perfect, however, it is now placed in the multiplying die-press. An impression is thus taken from the hardened die upon a blank die of cast steel, similar to the mode of impressing the money. The blank die is fixed to the lower die of the coining press, and by working the screw of the press, which has very long and heavily loaded arms, the matrix is made to strike the blank die with great force, and bring its impression in raised relief upon its surface. The hardness following this violent compression of the steel is so great, that a proper impression of the matrix cannot be procured without annealing and softening the die perhaps two or three times, which is done in iron pots, as in the case of hardening, but without cooling them so hastily. An impression taken this way is called a puncheon die. When the die sinker has given all the more delicate lines of the original to it, it is then hardened in the same manner as its original, and in its turn employed to give impressions to blank dies by a similar process, the impression being sunk *into* the dies, which again being used for coinage, gives the impression in raised relief to the money.

This important department of the mint is under the superintendence of the clerk of the irons, who never suffers the multiplying press to be used but in his presence. He has also the care of all the dies, and must account to the Board of Management for all matrices, puncheons, and dies made and destroyed in the mint.

Silver coins were, till nearly two centuries after the conquest, the only money of British manufacture. Henry III., towards the end of his reign, coined a few gold pieces, which were so little circulated, that, until an accident brought the fact to light in the year 1732, Edward III. had always been supposed the first of our kings who made gold money. At the conquest, the pound sterling was equal to a Tower pound * of silver of the old standard, and it continued of this weight till the 28th of Edward I. It was divided into twenty shillings, and each shilling into twelve pennies, of the weight of twenty-four grains each. Nothing, therefore, could have been more simple or convenient in every respect than this system of coinage, which subsisted unaltered for two centuries, and till several years after a second metal had been introduced into the circulation.

* The Tower or Rochelle pound, used in our mint until 18th Henry VIII., was three-fourths of an ounce less than the pound Troy. Since that year the pound Troy has been used.

Edward I. first debased the pound sterling, by coining it into twenty shillings and threepence. Edward III. by three several reductions, brought it to twenty-five shillings in tale; Henry IV. reduced it to thirty; Edward IV. to thirty-seven and sixpence; Henry VIII. to 42s 2¼d in the 18th year of his reign. Passing over the changes which happened between this and the second of Elizabeth, she, by two reductions, brought the Tower pound to 58s 1½d, or the pound Troy to 62 shillings, at which it still remains. Other operations of the same kind have since been in agitation at different periods; James I. had taken measures for a new reduction, when he was induced to give it up, chiefly by the sage counsels of Lord Bacon. The speech of Sir Robert Cotton to the same purpose, in the reign of Charles I., and its salutary effects, are well known; and Mr Locke had the honour of crushing the last attempt of this nature, which has been made with any prospect of success, by his celebrated treatise on the value of money.

The debasements of the gold coin have been made both by a diminution of their weight, and an increase of their denomination, but principally in the latter way, and with the view of adjusting them to the value of the silver currency during its successive changes, both real and nominal. The adjustment was made in the former way, at the two last debasements of silver, in Edward III.'s reign, and at the debasement of Henry IV. In the subsequent debasements it has been made by the latter method; but when the nominal value of the current gold was raised, the sovereign generally found it expedient to issue new gold coins of the former nominal value. Thus, when Edward IV. debased his silver, he raised the gold noble from 6s. 8d. to 8s. 4d.; but he soon after coined *angels* at 6s. 8d. the old value of the noble, and *angelets* equal to the former half nobles; and when Henry VIII. first raised the angel from 6s. 8d. to 7s. 6d., he coined *george-nobles* of 6s. 8d. When the last reduction of the silver took place in Elizabeth's reign, she fixed the rate of gold to silver in coins of the old standard, at $10\frac{4}{9}$ to 1, and in those of the new (or of crown gold) at $10\frac{1}{2}$ to 1. Since that period, the changes in the gold coin have only been calculated to keep pace with the gradual alterations in the relative real values of the two precious metals. It is remarkable that no such alteration seems to have called for a readjustment of the coinage till the beginning of James I.'s reign, although America had been discovered above a century, and even the richest of the silver mines, those of Potosi, upwards of fifty years; nay, Elizabeth, about the beginning of the seventeenth century, valued the gold at a lower rate, in proportion to the silver, than Edward III. had done; yet it is well known that the average silver price of wheat, during the last half of the sixteenth century, was nearly five times its silver price during the first half. (See the digression concerning the value of silver in the Wealth of Nations, particularly the tables at the end of Book I. chap. 11.) We should expect to find the whole gold coin exported, therefore, during this period, in consequence of the mint prices of the two metals being so much nearer each other than their market prices. But although no great exportation of gold seems to have been the result of this discrepancy, soon after James's accession, it was found necesary to raise the mint price of gold; and, by three several operations, that prince brought the proportion between gold and silver to $13\frac{4}{9}$ to 1, in coins of the old standard, and $13\frac{1}{4}$ to 1, in those of the new. After the Restoration it was raised still further; and the whole rise, during sixty years from the union of the crowns, was $32\frac{1}{2}$ *per cent.* But notwithstanding the great depreciation of silver, from

the middle of the sixteenth to the middle of the seventeenth century, the silver price of gold seems to have risen with a very unaccountable slowness. The first reduction in the weight of the gold coin which James I. made, was found sufficient to create an unprecedented abundance of that currency for several years; yet it amounted to no more than 10 *per cent.* of rise in the mint price of that metal. This was indeed, in some years more, found to be insufficient; and in the ninth year of his reign, he augmented the mint price 10 *per cent.* further, by raising the nominal value. No sooner had this measure been adopted, than it was found that the rise was much too great; the silver coin began to disappear, and continued diminishing rapidly for many years, to the great discomfiture of the government, as we find by various proclamations against the manufacture of plate and the exportation of bullion, '*in respect of the excesse of forraigne commodities, which is a thing in itselfe intolerable.*' Yet the price of silver was all this time continuing to fall, and did not, in fact, reach its lowest point before the year 1640 or 1650. It was not till this last period, or about the time of the Commonwealth, that the depreciation of silver was able to counteract the effects of the too great rise in the mint price of gold, effected by the two operations of James, and by another reduction which he very injudiciously made at the time when silver was most quickly disappearing. After this, the market silver price of gold continued to rise, so that Charles II. once more reduced the weight of the gold coin; the guinea was issued at 20 shillings value, but it became current at a higher rate, and was allowed to vary with the relative market prices of the two metals. The silver coin, during the remaining part of the century, suffered extremely from clipping; and at last this evil rose to such a height, that the guinea passed for 30 shillings; all commodities became dear in proportion; and silver bullion was exported to buy gold. The recoinage was now undertaken at a great expense; and during the interval, the people became more accustomed to gold than to silver coins, which were besides disliked in general on account of their late degradation. Guineas were at the same time prohibited from passing for more than 22 shillings; they soon fell to 21s. 6d.; but this was still higher than the market price of gold bullion, and the new silver coins were accordingly exported; so that in 1717, when government referred the consideration of the matter to Sir Isaac Newton, he was of opinion that, in a short time, the payments of silver would not be made without a premium. In pursuance of this great man's advice, the nominal value of the guinea was reduced to 21s., and it was fixed at this rate as legal tender.

The violent changes which took place in the monetary system during the interval between the 34th Henry VIII. and the 6th Edward VI., were of a different description from those hitherto under consideration. They consisted in alterations of the standard. By three several debasements, Henry VIII. reduced the standard of silver from 11 oz. 2 dwt. and 18 grs. alloy, to 4 oz. and 8 oz. alloy; and Edward VI. brought it down to 3 oz. and 9 oz. alloy; so that the pound of old standard silver was now coined into £13 6s. $4\frac{3}{4}$d. Nor was any regard paid to the relative values of gold and silver during these alterations. The proportion in 36th Henry VIII. was $6\frac{8}{9}$ to 1; in 3d Edward VI. it was $5\frac{1}{2}$ to 1; and in 5th Edward VI. it was only $2\frac{1}{2}$ to 1: So that enormous profits, sometimes above 350 per cent., were made by melting and exporting the gold coin; and accordingly it all disappeared from circulation in a very short time.

For this evil a reform of the coin was the only remedy; and it was undertaken at the end of Edward's reign, upon very judicious principles, and to the fullest extent. He left this salutary change nearly completed; and Elizabeth, by putting the last hand to so great a work, obtained, as often happens in such cases, the glory of the whole enterprise. Indeed, there is nothing really admirable in the general policy of this renowned princess with respect to the coinage. If she finished the reform of her brother, she departed from some of its wisest principles; and, after restoring the standard of fineness, she reduced the weight of the currency, by several operations, and was only prevented from executing still greater changes, by the firmness and sagacity of Burleigh. The issue of base coin in Ireland during Tyrone's rebellion, is a measure scarcely to be paralleled in the history of public frauds. If we except the extravagant imitation by James II. it stands unmatched in the annals of the coinage. The inefficacy of the plan was remarkable. The Irish were ready for every species of submission after the defeat of the insurrection; but the base coin was universally rejected, and would not pass, even at its real value. See *Pacata Hibernia*, and *Rice Vaughan's Discourse*, p. 53. James II., after the revolution in England, forced a copper and pewter coinage upon the Irish, at the rate of above 660 times its intrinsic value.

Coins. The following table of the relative value of the different species of coin is taken from the Companion to the British Almanac for 1830. The American value in dollars and cents is here given, in addition to the value in English currency, given in the Almanac. The subject is one which does not admit of perfect accuracy, but we believe the estimates are sufficiently correct for all the purposes for which such a table can be used. The rates used in the custom-houses of the United States for some of the most important monies of account mentioned, are as follows, being somewhat different from the value assigned to them in the table:—

	dol.	*cts.*
English pound sterling,	4	44$\frac{4}{9}$
——— shilling sterling,	0	22$\frac{2}{9}$
——— penny sterling,	0	01$\frac{85}{100}$
France—franc,	0	18$\frac{7}{10}$
Holland and the Netherlands—florin or guilder,	0	40
———sou or stiver,	0	02

The method of obtaining the results in the table below (we use the words of the Companion) is founded upon the following principle. In a coin we consider the weight and standard. By *standard* is meant the proportion of pure gold or silver which it contains: the rest is alloy. Thus, if we suppose a coin to contain a thousand parts of metal, of which 917 are pure gold or silver, the 83 remaining parts being alloy, the 917 represent the standard, or relative purity of the coin. Suppose we wish to know what is the value, in English money, of the Russian imperial of 10 rubles: the weight is 13·073 gram., the standard at 917; deducting the alloy, that is, 1·08 gram., there remain, in pure gold, 11·988 grammes. The English sovereign weighs 7·9808 gram., the standard is at 917, the alloy, consequently, 0·662 gram., and the weight of pure gold contained in it, 7·3184 gram. Now, by the rule of three, the question will thus be resolved: 7·318 gram. : 11·988 gram. :: 20 shillings : = £1 12*s.* 9*d.* By this method, we can ascertain the relative value of all coins; but sometimes the value thus ascertained will not exactly agree with the sum allowed in exchange. This difference arises from political causes and commercial vicissitudes. This fall and rise, in the relative value of money, principally takes place wherever there is a paper currency.—A report of the director of the United States' mint, in 1827, gives the weight, value and

fineness of several of the coins of this country, as follows:—

	Weight. dwt. grs.	Pure Gold. dwt. grs.	Current val. by tale. dol. cts.	Value pr. dwt. cts.	Actual val. dol. cts. m.
Sovereign,	5 3·27	4 17	4 55	88⅝	4 56 6
Guinea, .	5 9·24	4 22·65	4 75	do.	4 79 4

The silver coins of late emissions are of less value than the older ones:—

	Weight. dwt. grs.	Fine silver. dwt. grs.	Current val. by tale. dol. cts.	Value per oz. dol. cts. m.	Actual val. dol. cts. m.
Crown, before 1816,	19 8·5	17 21·7	1 16	1 19 6	1 15
——— 1816 to 1820,	18 4	16 19·3	1 15	do.	1 06 6
Shilling, before 1816,	3 20·5	3 13·6	23	do.	23
——— 1816 to 1820,	3 15	3 65·	23	do.	21 7

*A General Table of the Gold and Silver Coins of different Countries, giving their national Denominations and Value, Weight in Dwts. and Grammes, the Number of Parts of Pure Metal which they contain, and their Value in English Money and in Dollars and Cents.**

1. United States of America.

National denominations.	dwt. grs.	Gram.	Stand.	Eng. val. L. s. d.	Amer. val. dol. ct. m.
Gold.					
Eagle, of 10 dollars . .	11 6	17·480	917	2 3 9½	10 0 0
Half-eagle, of 5 dollars, .	5 15	8·740	917	1 1 10½	5 0 0
Quarter-eagle, of 2½ dollars,	2 19½	3·370	917	0 10 11½	2 50 0
Silver.					
Dollar, ...	17 10	27·000	903	0 4 3½	1 0 0
Half-dollar, . . .	8 17	13·500	903	0 2 1¾	0 50 0
Quarter-dollar, . .	4 8½	6·750	903	0 1 0⅞	0 25 0

2. Austria and Bohemia.

Gold.					
Emperor's duest, . .	2 5½	3·491	986	0 9 5	2 19 4
Hungarian ducat, . .	2 5½	3·491	990	0 9 5½	2 19 9
Half-sovereign, . .	3 7½	5·567	917	0 14 9	3 46 6
Quarter-sovereign, . .	1 15½	2·7835	917	0 7 4½	1 71 8
Silver.					
Crown, since 1753, . .	18 1	28·064	833	0 4 1½	0 96 1
Half rix-dollar, or florin, .	9 0½	14·032	833	0 2 0½	0 48 0
20 kreutzers, . . .	4 6½	6·682	583	0 0 8½	0 16 0
10 ditto	2 3¼	3·341	500	0 0 4	0 7 7

3. Baden.

Gold.					
Piece of 2 florins, . .	4 9	6·800	901	0 16 8½	3 88 8
——— 1 florin, . .	2 4½	3·400	901	0 8 4⅛	1 94 4
Silver.					
Piece of 2 florins, . .	16 2	25·150	750	0 3 3⅜	0 77 2
——— 1 florin, . .	8 1	12·725	750	0 1 3⅜	0 30 5

4. Bavaria.

Gold.					
Carolin, ...	6 5½	9·744	771	1 0 4½	4 74 2
Maximilian, . . .	4 4	6·496	771	0 13 7⅜	3 17 4
Silver.					
Crown, . . .	18 2	29·343	868	0 4 6	1 4 8
Rix-dollar of 1800, . .	17 12	27·513	833	0 4 0⅜	0 94 2
Teston, or kopfstuck, .	4 6½	6·643	583	0 0 8⅝	0 16 0

5. Denmark.

Gold.					
Ducat current since 1767,	2 0	3·143	875	0 7 6	1 74 7
Ducat specie, 1791 to 1802,	2 5½	3·512	979	0 9 4⅛	2 18 9
Christian, 1773, . .	4 7	6·735	903	0 16 7	3 86 4
Silver.					
Rix-dollar, or double crown, of the value of 96 Danish shillings of 1776, .	18 14	29·126	875	0 4 6	1 4 8
Rix-dollar, or piece of 6 Danish marks of 1750, .	17 6	26·800	833	0 4 0	0 93 2
Danish mark of 16 shillings of 1776, . . .	4 0	6·236	688	0 0 7½	0 14 5

6. France.

The money unit, in France, is the *franc*, which, according to the decimal system, is divided into 100 parts, called *centimes*. In government accounts and legal deeds, all sums must be expressed in francs and centimes; but among the people, and in the purchase of goods sold by retail, and in small quantity, the denomination of *sous* is still in use. This practice does not create confusion, because the sou is a multiple of the centime,—that is, there are 20 sous to the franc, and each contains 5 centimes. The two sous piece may also be called *décime*, or tenth of a franc. Although the franc and the livre tournois now appear to be of equal value, there is, however, a slight difference in favour of the franc:—100 fr. = 101 livres 5 sous. Hence, if an individual had to discharge a debt contracted previously to the year VIII. of the republic, and stipulated in livres tournois, he would be entitled, in making his payment in francs, to a deduction in the proportion above mentioned. Formerly, the livre tournois was the money unit of France. Its value has varied much, although it has retained the denomination which, originally, was the expression of its nature. Under Charlemagne, in the 9th century, its weight was 12 ounces, or 1 lb. troy weight, and its value 78 liv. 17 sous of present money. The weight and value progressively decreased down to the time of Louis XV., when it only amounted to 8 sous. Under Louis XVI., it rose again to 20 sous. Besides the new coinage issued during the republic, under the empire, and since the restoration, the old one is still in circulation. There is, however, but little of it extant. The value of the silver pieces was not only reduced in 1810, as will be seen here, but the pieces of 24, 12, and 6 sous are not to be taken in payment, except they have preserved some part of the stamp (*empriente*); consequently, all those which were defaced have been withdrawn from circulation. There is also in France a coin composed of copper and silver, in the proportion of 4 to 1, called *bilion*, and denominated, by the people, *monnaie grise*. Before the revolution, there were, of this mixture, *pieces of six liards* (the French sou being divided into four liards), and of two sous and a half, called *pieces of six blancs*: there are few of this value now extant, but there are pieces of two sous, or décimes.

New Coin.

National denominations.	dwt. grs.	Gram.	Stand.	Eng. val. L. s. d.	Am. val. dol. ct. m.
Gold.					
20 franc piece, . . .	4 3½	6·4516	900	0 15 10½	3 69 9
40 ——— . . .	8 7	12·9032	900	1 11 8½	7 38 8
Silver (argent Blanc).					
5 franc piece, . . .	16 1	25·000	900	0 4 0	0 93 8
2 ——— . . .	6 11	10·000	900	0 1 7	0 36 8
1 ——— . . .	3 5½	5·000	900	0 0 9½	0 18 4
½, or 50 centimes, . .	1 15	2·500	900	0 0 4½	0 9 2
¼, or 25 ——— . .	0 15½	1·250	900	0 0 2⅛	0 4 2
Billon (monnaie grise).					
Piece of 0 10 centimes				0 0 0¾	0 0 1 8
Copper (old and new).					
Décime, or 2 sous, ...				0 0 0¾	0 0 1 8
Sou, or 5 centimes, ...					
Sou, or 1 centime, ...					

Value of the Old Coin in Francs.

	Livres.		Fr. Ct.	dwt. gr.	Gram.					
Louis of	24	=	23 55	4 22	7·649	901	0 18	8½	4 35	0
Double ditto	48	=	47 29	9 20	15·297	901	1 17	4⅝	8 70	2
Silver.										
Ecu, or piece of 6	=		5 50	18 18	29·188	906	0 4	7	1	6 8
Petit écu, or p. of 3	=		2 75	9 9	14.744	906	0 2	2¼	0	50 6
Piece of 24 sous	=		1 0	3 20	5 897	sup.	0 0	9⅜	9	18 4
——— 12 sous	=		0 50	1 22	2·948	posed	0 0	4½	0	9 2
——— 6 sous	=		0 25	0 22½	1·474	906	0 0	2¼	0	4 4
——— 30 sous	=		1 50	6 12	10.136	660	0 1	2½	0	27 6
——— 15 sous	=		0 75	3 6	5·066	660	0 0	7⅛	0	13 8

7. Hamburg.

Gold.					
Ducat ad legem Imperii, .	2 5½	3·491	986	0 9 4⅛	2 18 9
New town ducat, .	2 5½	3·488	979	0 9 4	2 17 4
Silver.					
Mark banco (imaginary), .	....	....	...	0 1 5⅛	0 34 4
16 shilling piece, convention,	5 20	9·164	750	0 1 2½	0 25 1
Rix-dollar specie, . .	18 18	29·233	889	0 4 7	1 6 8

8. Holland and the Netherlands.

Gold.					
Ducat, ...	2 5½	3·512	986	0 9 5⅞	2 20 1
Ryder, ...	6 10½	9·988	920	1 5 1½	5 84 9
20 florins, 1808, . .	9 7½	13·659	917	1 14 2¼	7 97 5
10 florins, . . .	4 15⅝	6·829	917	0 17 1⅛	3 96 3
10 Williams, 1818, . .	4 7½	6·709	900	0 16 5½	3 83 4
Silver.					
Florin, . . .	6 22	10·597	917	0 1 8½	0 39 8
Escalin (6 sous), . .	3 4⅝	4·976	583	0 0 6	0 13 9
Ducatun, or ryder, . .	20 22	32·750	941	0 5 5	1 26 2
Ducat, or rix-dollar, . .	18 6	28·236	673	0 4 4	1 0 1

The florin is divided into 20 sous, and the sou into 5 cents.

9. Japan.

Gold.					
Old kobang of 100 mas, . .	It has not been possible to ascertain the legal weight and title of these coins. Their value is, therefore, only approximate.			2 7 3	11 0 9
Half ditto, ...				1 3 7½	5 5 4
New cubang, . . .				1 5 11	6 3 5
Half ditto, ...				0 12 10½	3 0 0
Silver.					
Tigo-gin, of 40 mas, . .				0 11 5	2 66 0
Half ditto, ...				0 5 8½	1 33 0
One fourth ditto, . . .				0 2 10½	0 66 5
One eighth ditto, . . .				0 1 5	0 33 0

10. Lombardo-Venetian.

Gold.					
Sovereign, 1823, . . .	8 18	11·32	900	1 7 1	6 31 0
Half ditto, ...	4 9	5·666	900	0 13 6½	3 15 5

* The weight of the coins has been given both in *grammes* and in dwts. It is very easy for any one to convert grammes into dwts., by means of the rule of three, knowing that 1 lb. troy weight, or 200 dwts., are equal to 373·095 grammes. The ratio of gold to silver, in the United States, is as 15 11-27ths to 1. Any one, therefore, by deducing from the above table the weight of the pure metal, in the gold and silver coins, can obtain their precise relative value.

National denominations.	Silver. dwt.grs.	Gram.	Stand.	Eng. val. L. s. d.	Am.val. dol.cts.m.
Crown,	17 7½	25·986	900	0 4 1½	0 96 1
Half-crown, or florin,	8 15½	12·993	900	0 2 0½	0 48 0
Austrian livre,	2 18½	4·331	900	0 0 8½	0 16 0

11. Mogul (East Indies).

	Gold.				
Muhar of Bengal,	7 23		993	1 13 8	7 84 4
—— of Bombay,	7 10½		953	1 10 1	7 0 9
Gold rupee, Bombay,	7 11		922	1 9 2	6 79 6
—— Madras,	7 12		916	1 9 3	6 81 5
Star pagoda, Madras,	2 4½		792	0 7 6	1 74 7
	Silver				
Rupee, Sicca,	7 12		979	0 2 0½	0 47 5
—— Arcot,	7 9		941	0 1 11½	0 46 1
—— Bombay,	7 11		926	0 1 11	0 44 6
—— Broach,	7 10		883	0 1 9	0 40 7

12. Naples.

	Gold.				
New ounce of 3 ducats,	2 10½	3.786	996	0 10 5½	2 44 1
	Silver.				
12 carlini, 1804,	17 15	27·533	833½	0 4 1½	0 95 8
Ducat of 10 carlini, 1784,	14 18	22·810	839½	0 3 4½	0 78 1
2 carlini, 1804,	2 22	4·588	833½	0 8 0	1 86 4
1 ——, 1804,	1 11	2·294	833½	0 0 4	0 7 7
Ducat of 10 carlini,	14 18	22·943	833	0 3 4½	0 78 1

13. Papal States.

	Gold.				
Pistola of Pius VI. and VII.,	3 12½	5·471	916⅔	0 13 11½	3 24 7
Half ditto,	1 16½	2·735	916⅔	0 6 11½	1 62 3
Zecchino, 1769,	2 4½	3·426	1000	0 9 4½	2 18 4
Half ditto,	1 2½	1·713	1000	0 4 8½	1 9 2
	Silver.				
Crown of 10 paoli,	17 1	26·437	916⅔	0 4 3½	0 99 5
Testone of 3 paoli,	5 2	7·932	916⅔	0 1 3½	0 30 0
——— of 20 paoli,	3 10	5·287	916⅔	0 0 10½	0 20 3
Paolo,	1 17	2·644	916⅔	0 0 5½	0 10 1

The paolo is divided into 10 bajocchi; the crown into 10 paoli.

14. Parma.

	Gold.				
Zecchino,	2 5½	3·468	1000	0 9 5½	2 20 1
Pistola of 1784,	4 19½	7·498	891	0 18 3	4 25 2
—— of 1786,	4 14	7.141	891	0 17 4½	4 4 8
40 lire of Maria Louisa, since 1815,	8 7½	12.903	900	1 11 9	7 29 8
20 ditto,	4 3½	6·451	900	0 15 10½	3 69 9
	Silver.				
Ducat of 1784,	16 11	25·707	906	0 4 1½	9 95 6
Piece of 3 lire,	2 8½	3·672	833	0 0 6½	0 13 6
5 lire of Maria Louisa,	16 0	25·000	900	0 3 11½	0 92 2

15. Persia.

	Gold.				
Rupee,	The weight and title have not been ascertained.			1 9 1½	6 79 1
Half ditto,				0 14 6½	3 34 4
	Silver.				
Double rupee of 5 abassis,				0 3 10½	0 90 2
Rupee,				0 1 11½	0 45 5
Abassi,				0 0 9	0 17 4
Mamoudi,				0 0 4½	0 8 7
Larin,				0 0 9½	0 18 4

16. Portugal.

	Gold.				
Lisbonine, or moidore of 4800 reis,	8 22	10·752	917	1 6 11½	6 22 8
Half ditto of 2400 reis,	3 11	5·378	917	0 13 5½	3 13 8
Quarter ditto of 1200 reis,	1 17½	2·688	917	0 6 8½	1 56 7
Portuguese, or moiadobra of 3,400 reis,	9 5½	14·334	917	1 15 11	8 32 0
Half Portuguese of 3200 reis,	4 14½	7·167	917	0 17 10½	4 16 5
Piece of 16 testons, or 1600 reis,	2 7½	3·583	917	0 8 11½	2 8 2
—— of 12 testons, or 1200 reis,	1 17½	2·538	917	0 8 4½	1 61 8
—— of 8 testons, or 800 reis,	1 3½	1.792	917	0 4 5½	1 4 3
Cruzada of 480 reis,	0 16½	1·045	917	0 2 7½	0 60 7
	Silver.				
New crusada of 480 reis,	9 1	14·633	903	0 2 7½	0 60 7

17. Prussia.

	Gold.				
Ducat,	2 5½	3·491	979	0 9 4	2 17 5
Frederic,	4 7	6·689	903	0 16 6	3 84 4
Half ditto,	2 3½	3·345	903	0 8 3	1 92 2
	Silver.				
Rix-dollar, or thaler of 30 silbergroschen, of 1823	14 6½	22·272	750	0 2 11½	0 68 4
Piece of 5 silbergroschen,	2 9	3·712	750	0 0 5½	0 11 1
Silbergros,		2·192	208	0 0 0½	0 1 4

18. Ragusa.

	Silver.				
Ragusan, or talaro,	18 22	29·400	600	0 3 0	0 69 9
Half ditto,	9 11	14·700	600	0 1 6	0 34 9
Ducat,	8 19	13·666	450	0 1 1	0 25 2
12 grossettes,	2 9½	4·140	450	0 0 4	0 7 8
6 ditto,	1 4½	2·070	450	0 0 2	0 3 9

19. Russia.

	Gold.				
Ducat from 1755 to 1762,	2 5½	3·495	979	0 9 4½	2 18 0
—— of 1763,	2 5½	3·437	969	0 9 2½	2 14 1
Imperial of 10 roubles, from 1755 to 1763,	12 19	16·585	917	2 1 6½	9 67 9
Half ditto,	6 9½	8·293	917	1 0 9½	4 83 9
Imperial of 10 roubles, since 1763,	7 17½	13·073	917	1 12 9	7 63 1
Half ditto,	3 20½	8·536	917	0 16 4½	3 81 5
	Silver.				
Rouble of 100 copecks, from 1750 to 1762,	18 1	25·670	802	3 3 7½	0 84 9
Ditto, from 1763 to 1807,	15 10	24·011	750	0 3 2	0 73 8

20. Sardinia.

	Gold.				
Carlin, since 1768,	10 7½	16·056	892	1 19 1½	9 11 6
Half ditto,	5 23½	8·028	892	0 19 6½	4 55 8
Pistole,	5 10½	9·118	906	1 2 6½	5 25 7
Half ditto,	2 17½	4·559	906	0 11 3½	2 62 6
	Silver.				
Crown, since 1768,	15 9½	23·590	896	0 3 6½	0 86 9
Half-crown,	7 13½	11·795	896	0 1 10½	0 43 2
Quarter ditto,	3 18½	5·897	896	0 0 11	0 21 4
New crown of 1816,	18 0	25.000	900	0 3 11½	0 91 7

21. Savoy and Piedmont.

	Gold.				
Zecchino,	2 5½	3·468	1000	0 9 5½	2 20 9
Double new pistola of 24 livres,	6 4½	9·620	906	1 3 9½	5 51 3
Half ditto,	3 2½	4·810	906	0 11 10½	2 77 2
New pistola of 20 livres, 1816,	4 5½	8·451	900	0 15 10	3 68 9
Carlino, since 1755,	30 2½	48·100	906	5 19 0	27 72 8
Half ditto,	15 11½	24·050	906	2 19 8	13 86 4
Zecchino of Genoa,	2 6½	3·487	1000	0 9 6½	2 21 8
	Silver.				
Crown of 6 livres, since 1755,	22 14	35·118	906	0 5 7½	1 30 5
Half-crown,	11 7	17·559	906	0 2 9½	0 65 0
Quarter ditto, or 30 sous,	5 15½	8·779	906	0 1 4½	0 32 5
One eighth ditto, or 15 sous,	2 19½	4·389	906	0 0 8½	0 16 5
New Crown of 5 livres, 1816,	16 1½	25·000	900	0 4 0	0 94 0

22. Saxony.

	Gold.				
Ducat,	2 5½	3·491	986	0 9 5	2 19 4
Double Augustus, or 10 thalers,	8 13½	13·340	903	1 12 11	7 67 0
Augustus, or 5 thalers,	4 6½	6·670	903	0 16 5½	3 83 5
Half ditto,	3 3	3 330	903	0 8 2½	1 91 7
	Silver.				
Rix-dollar specie, or convention, since 1763	18 1	28·064	833	0 4 1½	0 95 6
Half ditto, or florin,	9 0½	14·032	833	0 2 0½	0 47 5
Thaler of 24 groschen (imaginary coin),	.....	.....	..	0 3 1	0 71 8
Groschen, 24 to the thaler, 32 to the rix-dollar	1 3½	1·962	368	0 0 1½	0 2 9

23. Sicily.

	Gold.				
Ounce, 1748	2 20½	4·399	906	0 10 10½	2 52 9
	Silver.				
Crown of 12 tarins,	17 14	27·533	833½	0 4 0½	0 94 1

24. Spain.

	Gold.				
Doubloon of 8 crowns, 1772 to 1786	17 9	27·045	901	3 6 7	15 51 4
—— 4 crowns	8 16½	13·522	901	1 13 3½	7 75 7
—— 2 crowns,	4 8½	6·761	901	0 16 7½	3 87 8
Half-pistole, or crown,	2 4¼	3·380	901	0 8 3½	1 93 7
Doubloon of 8 crowns, since 1786,	17 9	27·045	875	3 4 8	15 0 8
—— 4 crowns,	8 16½	13·522	875	1 12 4	7 53 4
—— 2 crowns,	4 8½	6·761	875	0 18 2	3 26 1
Half-pistole, or crown,	2 4¼	3·380	875	0 8 1	1 88 3
	Silver.				
Piaster, since 1772,	17 8	25·045	903	0 4 3½	1 0 6
Real of 2, or peseta, or one-fifth of a piaster,	3 18	5·071	813	0 0 10½	0 20 4
Real of 1, or half peseta, or one tenth of a piaster,	1 21	2·985	813	0 0 5½	0 10 2
Reallillo, or one twentieth of a piaster,	0 22½	1·492	813	0 0 2½	0 4 8

These three last coins have currency in the peninsula only.

25. Sweden.

	Gold.				
Ducat,	2 5	3·482	967	0 9 3½	2 16 0
Half ditto,	1 2½	1·741	978	0 4 7½	1 7 8
Quarter ditto,	0 13½	·870	976	0 2 3½	0 53 9
	Silver.				
Rix-dollar of 48 shillings, from 1720 to 1802,	18 17	29·508	878	0 4 8	1 4 8
Two-thirds of rix-dollar, or 32 shillings,	12 11½	19·672	878	0 3 0	0 69 9
One-third, or 16 shillings,	8 5½	9·836	878	0 1 6	0 34 9

26. Switzerland.

	Gold.				
32 franken piece,	8 22	15·297	904	1 17 9	8 79 6
16 ditto,	4 11	7·648	904	0 18 10½	4 39 8
Ducat of Zurich,	2 5½	3·491	979	0 9 5	2 19 4
—— Berne,	2 5½	3·452	979	0 9 2½	2 15 0
Pistole of Berne,	4 21	7·648	902	0 18 10	4 38 8
	Silver.				
Crown of Basle of 30 batz, or 2 florins,	15 1	23·386	878	0 3 7½	0 84 0
Half-crown, or florin,	7 12½	11·693	878	0 1 9½	0 41 5
Franken of Berne, since 1803,	4 17½	7·512	900	0 1 2½	0 27 7
Crown of Zurich, of 1781,	16 0	25·957	844	0 3 8½	0 86 4
Half-crown, or florin, since 1781,	8 0	12·528	844	0 1 10½	0 43 2
Crown of 40 batz of Basle and Soleure, since 1798,	18 23	29·480	901	0 4 8	1 8 8
Piece of 4 franken of Berne, 1799,	18 22	29·370	901	0 4 8	1 8 8
—— Switzerland, of 1803,	18 23	30·049	900	0 4 9	1 10 7
Ditto of 2 franken of Switzerland, of 1803,	9 11½	15·025	900	0 2 4½	0 55 3
Ditto of 1 franken,	4 17½	7·512	900	0 1 2½	0 28 1

27. TURKEY.

National denominations.	dwt. grs.	Gram.	Stand.	Eng. val. L. s. d.	Am. val. dol cts.-m.
Gold.					
Zecchin zermahboub of Sultan Abdoul Hamet, 1774,	1 16	2·612	958	0 6 11	1 61 2
Half ditto,	0 20	1·321	958	0 3 5½	0 80 6
Roubbie, or ¼ zecchin fondoukli,	0 13⅔	0 831	802	0 1 11	0 44 7
Zecchin zermahboub of Sel. 11I.,	1 16	2·642	802	0 5 9½	1 35 0
Half ditto,	0 20	1·321	802	0 2 4½	0 55 8
Quarter ditto,	0 10	0·660	802	0 1 2¼	0 27 7
Silver.					
Altmichlec of 60 paras, since 1771,	15 50	28·822	550	0 2 9½	0 65 0
Yaremlec of 20 paras, or 60 aspers,	.. ..	.....	....	0 0 9½	0 18 0
Rouble of 10 paras, or 30 aspers,	.. ..	.....	....	0 0 4½	0 8 8
Asper, 120 in the piaster,	.. ..	.....	....	0 0 0	0 0 0
Piastre of 40 paras,	.. ..	.....	....	0 1 7	0 36 9
Piece of 5 piastres,	.. ..	.....	....	0 2 3⅔	0 52 9

28. TUSCANY.

Gold.							
Ruspone, 3 zecchini, with the lily,	6 17½	10·464	1000	1	8	7	6 66 0
One third ruspone, or zecchino,	2 5½	3·488	1000	0	9	6½	2 22 1
Half zecchino,	1 2¾	1·744	1000	0	4	9	1 10 7
Zecchino, with effigy,	2 5½	3·418	1000	0	9	6½	2 22 1
Rosina,	4 11½	6·976	896	0	17	1	3 98 0
Half ditto,	2 5½	3·488	896	0	8	6½	1 99 0
Silver.							
Francescone of 10 paoli, or crown of 10 paoli,	17 13½	25·507	917	0	4	5½	1 3 4
Piece of 5 paoli,	8 18¾	12·753	917	0	2	2¾	0 51 5
——— 2 paoli,	3 6¾	5·101	917	0	0	10	2 33 0
——— 1 paoli,	1 15⅞	2·751	917	0	0	5	0 9 7

29. VENICE.

Gold.							
Zecchino,	2 5¾	3·484	1000	0	9	6	2 21 4
Half ditto,	1 2⅞	1·742	1000	0	4	9	1 10 7
Ozella,	8 19	13·666	1000	1	17	4	8 70 0
Ducat,	1 9⅝	2·175	1000	0	5	11½	1 39 0
Pistola,	4 8½	6·764	917	0	15	11½	3 71 6
Silver.							
Ducat of 8 livres,	14 15½	22·777	8:6	0	3	3½	0 77 0
Crown of the cross,	20 10	31·788	948	0	5	3½	1 23 8
Ducatoon,	18 0	27.914	948	0	4	8	1 9 0
Talaro,	18 13	28·990	826	0	4	2⅞	0 98 3
Ozella,	6 8	9·843	948	0	1	7⅞	0 38 1

(For further information in regard to coins, see *Standard*, *Mint*, *Money*, and *Exchange*.)

COIRE (*Chur*); the capital of the Swiss canton of the Grisons, on the rivers Plessur and Rhine, with 3350 inhabitants. The trade between Germany and Italy is the cause of the wealth of this city. Not far from Coire the Rhine begins to be navigable for small vessels. This town contains several scientific establishments, and a bishop's see, whose income amounts to 10,000 guilders, chiefly derived from the Tyrol. The secular possessions of the bishops were given, in 1802, to the Helvetic republic, as an indemnification for losses which it had suffered in other quarters. Until 1498, Coire was a free imperial city, but at that time came under the government of the bishop, who was under the archbishop of Mentz. There is a very good school here.

COKE. See *Coal*.

COKE, SIR EDWARD, one of the most eminent English lawyers, the son of Robert Coke, esquire, of Norfolk, was born in 1550. He received his early education at the free school of Norwich, whence he was removed to Trinity college, Cambridge. From the university he went to London, and entered the Inner Temple. He pleaded his first cause in 1578, and was appointed reader of Lyon's Inn, where his lectures were much frequented. His reputation and practice rapidly increased, and he was placed in a situation of great respectability and affluence, by a marriage with a co-heiress of the Paston family. He was chosen recorder of the cities of Norwich and of Coventry; was engaged in all the great causes at Westminster hall, and, in the 35th year of Elizabeth, chosen knight of the shire for his county, and speaker of the house of commons. In 1592, he became solicitor-general, and, soon after, attorney-general; and the death of his wife, who brought him ten children, gave him another opportunity of increasing his influence, by a marriage with the widow lady Hatton, sister to the minister Burleigh. He acted the usual part of a crown lawyer in all state prosecutions; and one of the most important that fell under his management as attorney-general, was that of the unfortunate earl of Essex, which he conducted with great asperity. Soon after the accession of James I., he was knighted. The celebrated trial of Sir Walter Raleigh followed, in which Coke displayed a degree of arrogance to the court, and of rancour and insult towards the prisoner, which was universally condemned at the time, and has been deemed one of the greatest stain upon his character, by all posterity. On the discovery of the gunpowder plot, he obtained great credit by the clearness and sagacity with which he stated the evidence; and, in 1606, he became chief justice of the common pleas. In 1613, he succeeded to the important office of chief justice of the court of king's bench, but was in much less favour with James than his rival, lord Bacon. He was, in fact, too wary and staunch a lawyer to commit himself on the subject of prerogative; and as his temper was rough, and his attachment to law truly professional, he could scarcely forbear involving himself with a court so notorious for arbitrary principles as was the English during the reign of James. The honourable zeal which he displayed in the execrable affair of Sir Thomas Overbury and in the prosecution of the king's wretched minions, Somerset and his countess, for that atrocious murder, made him enemies; and advantage was taken of a dispute, in which he erroneously engaged with the court of chancery, to remove him, in 1616, both from the council and his post of chief justice. His real offence, however, was a refusal to favour the new favourite Villiers in some pecuniary matter. Coke meanly made up this breach by marrying his youngest daughter, with a large fortune, to the elder brother of Villiers, and was, in consequence, reinstated in the council in 1617, and actively engaged in prosecutions for corruption in office, and other crimes of a nature to recruit an exhausted treasury by the infliction of exorbitant fines. He, however, supported the privileges of the commons with great tenacity; for which, after the prorogation of parliament, in 1621, he was committed to the Tower. He was, however, quickly liberated; but was again expelled the privy council, with peculiar marks of displeasure on the part of James. On the accession of Charles I. he was nominated sheriff of Buckinghamshire, in order to prevent his being chosen member for the county, which, however, he represented in the parliament which met in 1628. The remainder of his career was highly popular; he greatly distinguished himself by his speeches for redress of grievances; vindicated the right of the commons to proceed against any individual, however exalted, openly named Buckingham as the cause of the misfortunes of the kingdom; and, finally, sealed his services to the popular part of the constitution, by proposing and framing the famous "petition of rights," the most explicit declaration of English liberty which had then appeared. This was the last of his public acts. The dissolution of parliament, which soon followed, sent him into retirement, at Stoke Pogis, in Buckinghamshire, where he spent the remainder of his life in tranquillity. He died in Sept., 1634, in the 85th year of his age, leaving behind him a numerous posterity and a large fortune. Sir Edward Coke was a great lawyer, but a great lawyer only. In mere legal learning he has, perhaps, never been excelled; but he was essentially defective in the merits of systematic arrangement and regard to general principles, without which law is a mere collection of arbitrary rules, undeserving the name of science. It must be admitted, however, that his writings, and especially his Commentary on Littleton's Treatise on Tenures, form a vast repository of legal erudition. In short, he was a man of immense professional research, and great sagacity and perseverance in a cho-

sen pursuit; and, as usual, more philosophical and general powers were sacrificed to its exclusiveness. His principal works are, Reports, from 1600 to 1615; A Book of Entries (folio, 1614): Institutes of the Laws of England, in four parts; the first of which contains the commentary on Littleton's Tenures; the second, a Commentary on Magna Charta and other statutes; the third, the criminal laws or pleas of the crown; and the fourth, an account of the jurisdiction of all the courts in the kingdom: A Treatise of Bail and Mainprise (1636, 4to): Reading on the Statute of Fines, 27 Edw. (4to); Complete copyholder (1640, 4to).

COKE, Thomas, a missionary, was born in 1747, at Brecon, in South Wales. In 1775, he took his degree of LL.D. at Oxford, and, soon after, became acquainted with the celebrated John Wesley, who soon brought him over to his own opinions, and in 1780, appointed him to superintend the London district; he also made him one of the trustees, on his execution of the deed of declaration as to all his chapels. In 1781, Wesley is said to have consecrated him as a bishop, for the purpose of superintending the Methodist societies in America. The doctor now, therefore, made several voyages to the United States and the West Indies, establishing meeting-houses, organizing congregations, and ordaining ministers. He subsequently returned to England, where he had a misunderstanding with Mr Wesley, who, as the founder of a sect, expected more submission than doctor Coke was inclined to bestow. He accordingly determined on visiting Nova Scotia; but in consequence of a storm the ship in which he embarked took refuge in the harbour of Antigua, which led him to preach there, and to visit several other islands; and he examined the state of religion generally, both in the West Indies and America, before he again returned to England. He made, altogether, nine voyages to this quarter of the globe, on the same business, and met with great success as a missionary. He was the author of a Commentary on the Bible, undertaken at the request of the Methodists; A History of the West Indies, and several other works, among which was a life of Wesley, written in conjunction with Henry Moore. In 1814 he sailed for the East Indies, but died on the voyage. He was of a zealous, but also of an amiable character.

COLBERG; a Prussian fortress and sea-port in Pomerania, in the district of Koslin, on the river Persante, one mile from the sea, with about 7000 inhabitants. Here is an important salt manufactory. This small fortress was often attacked and besieged by the Russians, in the war against Frederic the Great; and, in 1807, it was admirably defended by general Gneisenau, Schill, and the citizen Nettlebeck, against the French generals Feulie, Loison, and Mortier, who commanded in succession the besieging corps, consisting of 18,000 men, which fired into the town 6775 balls, besides those thrown against the works. The garrison which was only 6000 men strong, lost 429 killed, 1093 wounded, 209 prisoners, and 159 missing. The fortress was not taken. The remnant of the garrison was formed into one regiment, called the *Colberg regiment*, which was considered one of the bravest in the Prussian army. Blucher returned thanks to them in particular, for their conduct in the battle of Ligny, June 16, 1815, on which occasion they had been engaged from one o'clock till about dark, and had suffered great loss.

COLBERT, Jean Baptiste, a celebrated French minister of finances, was descended from a Scottish family, but born at Rheims, in 1619. His grandfather and father were both wine-merchants. He entered, in 1548, the service of le Tellier, secretary of state, by whom he was made known to cardinal Mazarin, who availed himself of his assistance, in the financial administration of the kingdom. Mazarin rewarded him, in 1654, with the office of secretary to the queen, and recommended him, at his death, to the king (1660). Louis XIV. made Colbert intendant of the finances. Colbert and Le Tellier now joined to effect the fall of Fouquet, for which purpose they had united, the former from ambition, the latter from envy. After effecting this object, Colbert, with the title of a *controleur-general*, assumed the direction of the finances. He had a task to remedy the evils which the feeble and stormy reign of Louis XIII., the splendid but arbitrary measures of Richelieu, the troubles of the Fronde, and the confused state of the finances under Mazarin, had occasioned. He found fraud, disorder, and corruption prevailing everywhere. The domains were alienated. Burdens, privileges, and exemptions were multiplied without measure; the state was the prey of the farmers-general, and, at the same time, maintained only by their aid. The people were obliged to pay 90,000,000 of taxes, of which the king received scarcely 35,000,000; the revenues were anticipated for two years, and the treasury empty. Colbert had to proceed from the same point as Sully; but the jealous and impetuous Louvois, the wars, the luxury and the prodigality of Louis XIV. increased his difficulties, and he was forced, in the latter half of his career, to retrace the steps which he had taken in the former. He began with establishing a council of finances and a chamber of justice; the first that he might have an oversight of the whole; the other that he might watch the embezzlements of the farmers-general, and liquidate the debts of the state. For the purpose of alleviating the public burdens, he endeavoured to lower the interest of the public debt; and, in order to mitigate the odium of this measure, he consented to a considerable diminution of the taxes, and to the remission of all arrears up to 1656. He abolished many useless offices, retracted burdensome privileges, diminished salaries, put a stop to the infamous trade in offices, and to the no less injurious custom of making the courtiers interested, as farmers-general, in the produce of the public revenue; he exposed the arts and abuses, and limited the immense gain of the collectors; established a loan-bank; diminished the interest of money: re-established the king in the possession of his domains, and appropriated suitable funds for each expenditure. A better distribution and collection of the taxes enabled him to reduce them almost one-half. The happiest success crowned his wise and courageously executed measures. Notwithstanding the expenses of nearly ten years' war, and the prodigality of a luxurious king, Colbert succeeded, in twenty-two years, in adding to the revenues more than 28,000,000, and making an equal diminution in the public burdens; and, at his death, in 1683, the revenue actually received amounted to 116,000,000.

In 1664, Colbert was superintendent of buildings, of arts and manufactures, and, in 1669, minister of the marine. To his talents, activity, and enlarged views, France owes the universal development and the rapid progress of her industry and commerce. France was not only freed from the taxes which its luxury had hitherto paid to foreign countries, but it partook also of the advantages of that industry which had previously distinguished Britain, Holland, Venice, Genoa, the Levant, and some cities of Flanders and Germany. Manufactures were established, and flourished; the public roads were improved, and new roads laid out. Colbert built the canal of Languedoc; formed the plan of that of Burgundy; declared Marseilles and Dunkirk free ports; granted premiums on goods exported and imported; regulated

the tolls; established insurance offices; made uniform laws for the regulation of commerce; laboured to render the pursuit of it honourable, and invited the nobility to engage in it. In 1664, two commercial companies were instituted to trade with the East and West Indies, to which the king advanced considerable sums. The colonies in Canada, Martinique, and particularly in St Domingo, received new life from their union with the crown, and began to flourish. New colonies were established in Cayenne and Madagascar. For the purpose of maintaining these distant possessions, a considerable naval force was required. Colbert created this also. When he entered the ministry of the marine, the navy consisted of a few old vessels, which Mazarin had permitted to rot in the harbours. Colbert at first purchased vessels in foreign countries, but soon had them built in France. The ports of Brest, Toulon, and Rochefort were repaired; those of Dunkirk and Havre were fortified. Naval schools were established, and order was introduced into all branches of the marine. In 1672, France had 60 vessels of the line, and 40 frigates: in 1681, victorious by land and sea, she had 198 men-of-war, and 166,000 seamen. By the advice of Colbert, Louis XIV. caused the civil and criminal legislation to be improved, and the arts and sciences encouraged. Under the protection and in the house of the minister (1663), the academy of inscriptions was founded. Three years afterwards, he founded the academy of sciences, and in 1671, the academy of architecture. The academy of painting received a new organization. The French academy in Rome was established. He enlarged the royal library, and the garden of plants, and built an observatory, in which he employed Huygens and Cassini. He began the mensurations of the meridian in France, and sent men of science to Cayenne. Paris was indebted to him for numerous embellishments, and many learned men in Europe received his patronage. But, notwithstanding all this, many objections have been made to this great minister. The most important is, that he promoted manufactures at the expense of agriculture, and left the peasantry without resources. With more justice, he is charged with having introduced an excess of minute and vexatious regulations into all branches of the administration. But Colbert must be judged with regard to the circumstances under which he acted. He did all that was possible; not everything he wished. He had not such an influence on the undertakings, resolutions, and inclinations of his prince as was enjoyed by Sully. Sully gave the law to his master; Colbert received it from his. The former might be called the minister of the nation; the latter, only of the king. Henry IV. Louis XIV. had both great aims; but the one for France, the other for himself; and this difference produced the most important results in their administration. Sully, ever independent and sure of approbation, enriched the state by a wise economy, which was promoted by Henry, who considered the people as his family: Colbert, always dependent and thwarted in his plans, maintained the state, notwithstanding the prodigality of the king, and rendered it flourishing, notwithstanding the burdens of numerous armies and expensive wars. He was forced to have recourse to measures which he desired to see abolished forever; and he predicted to the president, who recommended a loan, "You open a wound which our grandchildren will not see healed." As soon as peace permitted him to breathe more freely, he returned to his own principles, and corrected the consequences of measures which he had adopted against his own will so rapidly, that the end of his administration was the most splendid epoch of the reign of Louis XIV. Colbert was ambitious, but honest; and, living in a continual struggle with intrigue and jealousy, enjoyed no tranquillity. He died in 1683, at the age of sixty-four years, exhausted by incessant labour, worn out with anxiety and grief, remedying, with difficulty, the present embarrassments, and looking with apprehension to the future. The people of Paris, embittered by new taxes on provisions, disturbed his funeral, and threatened violence to his remains; but the misfortunes which soon afterwards afflicted the state, opened the eyes of his enemies, and obliged them to respect the memory of him whom they had unjustly persecuted.

COLCHESTER; a town in Essex, situated on the river Colne; 51 miles N. E. from London. It is situated on the north side of an eminence on the Colne, eight or nine miles from the sea. Vessels of 100 tons can come up to it. It contains an ancient castle, and has been encircled by walls, now much decayed. It is a place of considerable trade and manufacture. The principal manufacture consists of woollen cloth, particularly baize. Oysters form a considerable article of trade. It is an ancient town, supposed to be the *Colonia* of the Romans and the native place of the empress Helena, mother of Constantine. In 1648, this city sustained a memorable siege against the forces of the parliament, and did not surrender till after it had experienced the horrors of famine. Population in 1831, 16,167.

COLCHICUM. The *colchicum autumnale*, or meadow saffron, is a bulbous-rooted plant, which grows in various parts of Europe, and which, of late years, has become quite noted as a remedy for that bane of a luxurious life—the gout. It is a very powerful remedy, and should never be used without the attendance and advice of a well-educated medical practitioner, as its effects might otherwise be highly injurious. It is now believed to be identical with the base of the *eau médicinale*, which has been, for so long a period a celebrated empirical remedy for the gout. It is used in various forms, either the powdered root, or vinegar or wine, in which it has been steeped, or, which is considered the best, wine in which the fresh seeds have been steeped. It is also used with benefit in many cases of rheumatic affections, which often so much resemble the gout.

COLCHIS; a fertile country on the Black sea, now *Mingrelia* and *Guriel*, on the Rione (*Phasis* of the ancients). The expedition of the Argonauts first made the Greeks acquainted with this country, the original population of which, according to tradition, was derived from Egypt. The people were celebrated for frugality and industry. Strabo and others tell us that the inhabitants used to place fleeces in the streams, in order to intercept the particles of gold brought down from the mountains by the water. See *Argonauts*.

COLCOTHAR (also called *crocus martis*, and *rouge d'Angleterre*) is an impure brownish-red oxide of iron, which remains after the distillation of the acid from the sulphate of iron. It forms a durable colour, but is most used by artists, in polishing glass and metals.

COLD. See *Catarrh*.

COLDEN, Cadwallader, a Scottish physician and botanist, was the son of the reverend Alexander Colden, of Dunse, and born Feb. 17, 1688. After studying at the university of Edinburgh, he devoted himself to medicine and mathematics, in which he made great proficiency. In 1708, he emigrated to Pennsylvania, and practised physic for some years when he returned to England, and there acquired considerable reputation by a paper on animal secretions. From London he went to Scotland, and repaired again to America, in 1716. He settled a second time in Pennsylvania, but, in 1718, removed to

New York. After a residence of a year in this city, he was appointed the first surveyor-general of the lands of the colony, and, at the same time, master in chancery. In 1720, he obtained a seat in the king's council, under governor Burnet. For some time previous to this, he had resided on a tract of land, about nine miles from Newburgh, on Hudson river, for which he had received a patent, where he was exposed, every moment, to the attacks of the Indians, the tract being situated on the frontier. In 1761, he was chosen lieutenant-governor of New York, and occupied this station during the remainder of his life, being placed repeatedly at the head of affairs by the absence or death of several governors. During one of those periods, the paper intended to be distributed in New York, under the British stamp-act, arrived, and was put under his care, in the fortification called *fort George*. The people assembled in multitudes, under several leaders, and determined to cause the paper to be delivered up and destroyed. But, though the fort was declared untenable by the engineers, and the people threatened to massacre him, Colden defended his trust, and finally succeeded in securing it on board a British man-of-war, then lying in the port. The populace burned him in effigy, and destroyed his carriages, in his sight. After the return of governor Tryon, in 1775, he retired to a seat on Long Island, where he died, Sept. 28, 1776, in the eighty-ninth year of his age, a few hours before nearly one-fourth part of the city of New York was reduced to ashes.

Mr Colden's productions were numerous, consisting of botanical and medical essays. Among them is a treatise, showing the causes, and pointing out the remedies, of the yellow fever, which, about the year 1743, desolated New York. He also wrote an account of the prevalent diseases of the climate, and a history of the five Indian nations. But the work which cost him most time and labour, was one published, at first, under the title of the Cause of Gravitation; but which being afterwards much enlarged, appeared in 1751, with the title of the Principles of Action in Matter, to which is annexed a Treatise on Fluxions. He corresponded with many of the most distinguished characters of the day, among whom were Linnæus, Gronovius, the earl of Macclesfield, doctor Franklin, &c. Mr Colden always took great delight in the study of botany. His descriptions of between three and four hundred American plants were published in the *Acta Upsaliensia*. He paid attention also to the climate, and left a long course of diurnal observations on the thermometer, barometer, and winds.

COLDINGHAM; the name of a parish and village situated on the Scottish border, about two miles from Eyemouth, Berwickshire. It is supposed to be the Colonia of Ptolemy and the Coldana of Bede. Besides the ancient village of Coldingham, there are two of lesser note, named Auckeneraw and West Preston. The church, which was partially rebuilt in 1670, is all that remains of the priory of Coldingham, said to be the most ancient nunnery in Scotland, and to have been re-founded in 1098, by Edgar, king of Scotland, for Benedictine monks. Here, on the promontory called Abb's head, stand the remains of a chapel, to the north-west of which is a lofty peninsular rock, crowned with the ruins of Fast castle, which, though deemed an impregnable fortress, was several times, during hostilities between the two kingdoms, taken and re-taken by surprise. Several fortlets were formerly scattered over this parish; and on an eminence called Wardlaw are vestiges of an ancient oval encampment. Population of the parish in 1831, 2668.

COLDSTREAM, the name of a parish and town in Berwickshire, on the northern bank of the Tweed. The parish is about eight miles in length and four in breadth; the soil is rich, and in the highest state of cultivation. Its ancient name was Luyn-el, or Lienhall, the church of which, now in ruins, with its chapel of Hirsel, belonged to the priory of Cistercian nuns founded at this place, by Gospatrick, Earl of Dunbar; but on the erection of a new church, its designation was changed to Kirktown, and afterwards to Coldstream. The town is situated at the confluence of the river Leet with the Tweed, which is here crossed by a bridge that unites the two kingdoms. It is a thriving place, the chief thoroughfare from Edinburgh to Newcastle, and other parts in that direction, passing through it. Population of the parish in 1831, 2897. When general Monk quartered here in 1659—60, he raised a regiment of horse which he called, and which still continues to be called, *the Coldstream Guards*.

COLIC (from κῶλον, *colon*, the name of one of the intestines). The appellation of *colic* is commonly given to all pains in the abdomen, almost indiscriminately; but, from the different causes and circumstances of this disorder, it is differently denominated. When the pain is accompanied with a vomiting of bile, or with obstinate costiveness, it is called a *bilious colic*; if *flatus* causes the pain, that is, if attended with temporary distension, relieved by the discharge of wind, it takes the name of *flatulent* or *windy colic*; when accompanied with heat and inflammation, it takes the name of *inflammatory colic*; or *enteritis*. When this disease arises to a violent height, and is attended with obstinate costiveness, and an evacuation of fæces by the mouth, it is called *passio iliaca*, or *iliac passion*. Doctor Cullen enumerates seven species of colic. One of the most important is the *colica Pictonum*. This is called, from the places where it is endemial, the *Poictou*, the *Surinam*, the *Devonshire colic*; from its victims, the *plumbers'* and the *painters' colic*; from its symptoms, the *dry belly-ache*, the *nervous* and *spasmodic colic*. It has been attributed to the poison of lead, and this is undoubtedly the cause, when it occurs to glaziers, painters, and those employed in lead works; but, though this is one, it is by no means the only cause. In Devonshire, it certainly more often arises from the early cider, made of harsh, unripe fruit, and in the West Indies from new rum. The characteristics of this disease are, obstinate costiveness, with a vomiting of an acrid or porraceous bile, pains about the region of the navel, shooting from thence to each side with excessive violence, strong convulsive spasms in the intestines, and a tendency to a paralysis of the extremities. It is occasioned by long-continued costiveness; by an accumulation of acrid bile; by cold applied either to the extremities, or to the belly itself; by a free use of unripe fruits, and by great irregularity in the mode of living. From its occurring frequently in Devonshire, and other cider countries, it has been supposed to arise from an impregnation of lead received by the stomach; but this seems to be a mistake, as it is a very prevalent disease in the West Indies likewise, where no cider is made, and where there is only a very small quantity of lead in the mills employed to extract the juice from the sugar-canes. One or other of the causes just enumerated may justly be said always to give rise to this species of colic. The dry belly-ache is always attended with some degree of danger, which is in proportion to the violence of the symptoms, and the duration of the disease. Even when it does not prove fatal, it is too apt to terminate in palsy, and to leave behind it contractions of the hands and feet, with an inability in their muscles to perform their office; and in this

miserable state of existence, the patient lingers out many wretched years.

COLIGNY, Gaspard de, admiral of France, born in 1516, at Chatillon-sur-Loin, distinguished himself under Francis I., in the battle of Cerisoles, and under Henry II., who made him colonel-general of the French infantry, and, in 1552, admiral of France. He was distinguished for valour in battle, for strict discipline, and for his conquests over the Spaniards, in particular for his defence of St Quentin. When St Quentin was taken by storm, the admiral was made prisoner. After the death of Henry II., the intrigues of Catharine de' Medici induced him to place himself at the head of the Calvinists against the Guises. He formed so powerful a party, that the Catholic religion in France seemed to be in danger. Condé was more ambitious, enterprising, active; Coligny more considerate, prudent, and more fit to be the leader of a party; equally unfortunate in war with Condé, but skilled in remedying even what appeared irretrievable losses, and more to be feared after a defeat than his enemies after a victory, he was, besides, endowed with virtues, which he practised as far as party spirit and the violence of the times permitted him. The first battle between the Huguenots and Catholics (1562, at Dreux) was lost by the admiral, but he saved his army. When the duke of Guise was murdered at the siege of Orleans, he was accused of being the author of the murder, but he cleared himself by an oath: it was unnecessary, the nobleness of his spirit raising him above suspicion. The civil war recommenced with increased fury, in 1567. Coligny and Condé encountered the constable Montmorency at St Denis. This indecisive action was followed by the battle of Jarnac (in 1569), which was fatal to the Calvinists. Condé fell, and the whole burden of command devolved on Coligny. He alone sustained his party, and was beaten again at Moncontour, without, however, losing his courage. An advantageous peace seemingly put a stop to this contest (1570). Coligny appeared at court, and was, with his adherents, loaded with favours. Charles IX. gave him 100,000 francs, as an indemnification for his injuries, together with a seat in the council. From all sides he was warned not to trust to these caresses. As the admiral was leaving the Louvre, August 22, 1572, his right hand and left arm were wounded by a shot from a window. One Maurenal had fired at him from a building belonging to the monastery of St Germain l'Auxerrois, according to the plan of Catharine de' Medici, probably with the knowledge of the duke of Guise. Charles testified the deepest sorrow, caused search to be made for the assassin, and said to Coligny, "My father, you have the wounds, but I the pain." This he said at the moment when the massacre of the Protestants was already prepared. The slaughter began on the night of St Bartholomew's, August 24, 1572. (See *Bartholomew's Day, Saint.*) The duke of Guise hastened with a numerous suite to the house of the admiral. One Behme, or Besme, at their head, entered with his drawn sword into the chamber of the old man, who, sitting in an easy chair, said, with a calm mien, to their leader, "Young man, my grey hairs ought to command thy respect; but do as thou pleasest; thou canst shorten my life but a few days;" upon which the wretch pierced him with several stabs, and threw the body out of the window into the court-yard. The corpse was given up for three days to the fury of the people, and finally was hung up by the feet on a gibbet, at Montfaucon. Montmorency, a cousin of Coligny, caused it to be taken down, and had it secretly buried in the chapel of the castle of Chantilly. An Italian carried the head to Catharine, who ordered it to be embalmed and sent to Rome.

COLIN, also COLLIN; a town in Bohemia, with 4400 inhabitants, eleven leagues from Prague, famous on account of the battle which Frederic the Great lost there, June 18, 1757, the first which he lost in the seven years' war. Colin is also known for the precious stones found there.

COLISEUM; a gigantic ruin in Rome. This building, which was 1612 feet in circumference, and contained eighty arcades, was the greatest amphitheatre which Roman magnificence ever erected. It was built by Vespasian, and is said to have been erected in one year by the compulsory labour of 12,000 Jews and Christians. Authors rank it above the pyramids of Egypt, and other wonderful works of the ancient world. It is said to have held about 110,000 spectators, of whom above 90,000 were seated. For the greater part, it consists of *travertino*, and has three rows of columns, one above the other; the lowest is of the Doric, the second, the Ionic, and the highest, the Corinthian order. Down to the thirteenth century, this monument of ancient grandeur remained almost uninjured; afterwards pope Paul II. took all the stones from it which were used for the construction of the palace of St Mark, and, in later times, some other palaces were erected from its fragments. At present, care is taken not to touch the ruins of the Coliseum, but it is gradually crumbling away of itself, and in a few centuries, perhaps, nothing more may be seen of its upper part; the lower part, however, will last for ever. The enclosures in which the wild animals were kept are still standing, and remind us of the times when their builders were devoured by the beasts, to gratify the savage taste of the people. Benedict XIV. caused a cross to be erected in the centre of the arena, where every Sunday afternoon, Catholic worship is performed. A hermit resides in these vast ruins. The Coliseum received its name from the colossal statue of Nero, which was placed in it. There is in Rome a model of the Coliseum, as it was when complete, on a pretty large scale. The traveller, after having viewed this immense building by daylight, should return to gaze again by the light of the moon, when its grandeur is really amazing.—Very recently, an enormous structure, called Coliseum, has been erected in Regent's park, London, chiefly by a Mr Horner. It is divided into three parts—the panorama, or grand view of London, of which many points of view are afforded by the ascent of a winding staircase (for people who do not want the trouble of walking up, an ascending room is provided); the suites of rooms for subscribers, and the conservatory with greenhouses and fairy creations. The whole shows great ingenuity.

COLLATERAL RELATIONS (*Collaterales*); descendants of brothers or sisters, or the brothers or sisters of the ascending lines. In politics, collateral lines have often played an important part; and great jealousies have frequently existed between the collateral lines of a ruling family.

COLLATION is the comparison of manuscripts, in order to ascertain the true reading of an author. This is often a very important operation, as manuscripts were frequently made by people who did not understand what they wrote, or wrote very carelessly. Among the moderns, the Germans have done most in collation; for instance, Emanuel Bekker, of Berlin, for Plato; Niebuhr and Bluhme, for various authors in the libraries of Italy; G. H. Pertz, in regard to manuscripts relating to the early history of Germany, in the Italian and German libraries.

COLLE, Charles; a dramatic poet, born in 1709, at Paris. His early connexion with Hague-

nier, Gallet, and Pannard, writers of Anacreontic songs and *vaudevilles*, instilled into him the same inclination for pleasure, the same gay philosophy. Dramatic poetry he loved from his earliest youth. some of his pieces are still found in the *Repertoire du Théâtre Français*. He paints freely, nay, boldly, the manners of his time. He died in 1783. In 1807 appeared his posthumous work, *Journal Historique*, giving an account of interesting events in the history of literature from 1748 to 1772, in three vols.

COLLEGE (Latin, *collegium*); in its primary sense, a collection or assembly. In a general sense, a collection or society of men invested with certain powers and rights, performing certain duties, or engaged in some common employment or pursuit. Among the Romans, three were required to make a college (*tres faciunt collegium*). In a particular sense, *college* signifies an assembly for a political or ecclesiastical purpose. There were several such at Rome, e. g., *collegium pontificum, augurum, septemvirorum*, &c. In modern times we have the college of electors, or their deputies, at the diet of Ratisbon; so, also, the college of princes or their deputies, the college of cities or deputies of the imperial cities, the college of cardinals, or sacred college. In Russia, this denomination is given to councils of state, courts or assemblies intrusted with the administration of the government, and called *imperial colleges*. In Great Britain and America, a society of physicians is called a *college*. So, also, there are colleges of surgeons, a college of philosophy, a college of heralds, &c. Colleges of these kinds are usually incorporated or established by the supreme power of the state. This name is also given to a society of persons engaged in the pursuits of literature, including the officers and students. The English literary colleges are academical establishments, endowed with revenues, whose fellows, students, and tutors live together under a head, in particular buildings, in a monastic way. The buildings form quadrangles connected with gardens and grounds. The more ancient establishments, formerly monasteries, derive their origin from the 13th and 14th centuries. The college of Christ-church, Oxford, was founded in the time of Henry VIII., by cardinal Wolsey. The colleges are distinguished for their old Gothic architecture, and for collections in different branches of science and of art. They are also admired for their fine paintings on glass. The president of such a college (master, warden, rector) forms, with the other members of the government, the teachers and students, a corporation independent of the other colleges, as well as of the university. Graduates, maintained by the endowment of particular founders, are called *fellows* (in Latin, *socii*). There are other classes also supported in part by the funds of the colleges, and called *post-masters* and *scholars, exhibitioners* or *stipendiaries* and *servitors* (young men who wait on the others at table, and have board and instruction gratis during four years). Many colleges have also chaplains, choristers, clerks, or sextons, and a great number of servants. The president and the officers administer the college according to the statutes of the foundation. The visitor, who is a bishop or lord, named by the founder, decides in contested cases. The under-graduates are subjected to a severe discipline. They are obliged to go every day to the chapel, and are not allowed to sleep out of the college. Whoever wishes for a degree, must be presented to the university, as a candidate, by a dean. The fellows at the universities keep their fellowships for life, unless they marry or inherit estates which afford a greater revenue. They are successively promoted, so that their income amounts to from £30 to £150, and more, annually. From them the parishes are supplied, in which case they commonly lose their fellowships. Oxford has nineteen colleges, and six halls, or mere boarding-places, which have no funds, and consequently no fellows, where every student lives at his own expense. (The dining-rooms of the colleges are also called *halls*.) In Cambridge, there are twelve colleges and four halls, which are all provided with funds. Most of the colleges in Oxford and Cambridge have, besides their dependent members, that is, those who are supported from the college funds, independent ones, who live at their own expense, but are subjected to most of the college laws: they are called, according to their rank and the sum they pay for board, *noblemen, fellow-commoners* and *commoners*. The school at Eton has also a college, consisting of a provost, seven fellows and seventy boys, who are called *collegers*. The fellows of Eton have a right to marry, and to hold a living besides their fellowship. They are also considered as dignitaries of the church. They and the provost are the directors of the whole, manage the property of the college, fill the livings and fellowships connected with the institution, and choose the teachers. Of the collegers in Eton, the best scholar in the highest class is admitted into the first vacant place of king's college at Cambridge as a scholar, and then becomes, in three years, a fellow, i. e., is provided for during life. (See Ackermann's *History of the Colleges of Winchester, Eton, Westminster*, &c., London, 1817, and his *History of Westminster Abbey, and of the colleges of Oxford and Cambridge*, with copperplates.) Classical literature is the chief object of instruction, hence the general knowledge which, in England, men of the highest rank and of the greatest wealth possess of Grecian and Roman literature, exhibited in the frequent quotations from the classics, in parliament, which, in any other country, would appear somewhat pedantic. The lectures on scientific subjects are meager, compared with those of the continental universities, and afford scarcely the necessary hints for private study. The colleges are less institutions for education than learned republics with an orderly gradation of classes, of which one influences the other, and which are intimately connected with the spirit of the nation. (See *Universities*.) The English universities exercise no small influence upon the ecclesiastical and political establishments of that country, and have certainly contributed much to the national disposition for adhering steadily, and sometimes obstinately, to ancient establishments, customs, and views. The old universities, therefore, have been thought, by a large number of enlightened and liberal men, not to answer the demands of the age. To meet these demands, they have established the London university (q. v.). This again, on the same principle by which the Protestant reformation led to many salutary reforms among the Catholics, induced another party (the churchmen) to establish in the English metropolis the king's college (q. v.).

In Scotland, there are two colleges at St Andrews (the united College and St Mary's or New College),—one at Glasgow (founded in 1450),—two at Aberdeen (King's College, founded in 1497, and Marischal College, founded in 1593),—and one at Edinburgh (founded in 1581). These are all distinct universities, with the exception of the two at St Andrews, which are reckoned one university. The Scottish universities differ in many respects from those of England. In the English universities, the students are instructed by tutors who give them lessons in private; in the Scottish, tuition is given by lectures delivered by the professors in public, accompanied by examinations of the students. In the English, the meetings are called terms, and recur

several times in the course of a year; in the Scottish, the time of meeting is called a session, and of these each year has only one. There are other differences in the peculiar modes of teaching too numerous to be detailed in this place.

In France, there are royal colleges in all large towns, corresponding to what are called, in Germany, *gymnasia*. In the small towns, the colleges are called *colleges communaux*. These are private establishments, aided by the commune, and subject to the *surveillance* of the public authorities. In Paris, there are five royal colleges—*college royal de Louis le Grand, col. roy. de Henry IV., col. roy. de St Louis, col. roy de Bourbon, col. roy. de Charlemagne*. Besides these, there is the *college royal de France*, which deserves the name of a university. It was instituted in 1529, by Francis I., at the solicitation of Budæus. (q. v.) Louis XVIII. established in this college a chair of Tartar-Mantchou and Chinese languages, and one of the Sanscrit. Twenty-one professors, among whom there are always some of the most distinguished men, lecture in this college, publicly and gratuitously. Their lectures embrace, besides the branches of science generally taught in universities, the Turkish, Persian, Arabic, Chaldaic, Syriac, Chinese, Sanscrit, and Tartar-Mantchou languages.

American Colleges. The course of instruction in all the American colleges is completed in four years. Certain qualifications are demanded of candidates for admission, which vary, according to the regulations of the different colleges. These embrace, for admission to the principal colleges, a good knowledge of English grammar, arithmetic, some acquaintance with geography, an ability to read the easier Latin authors, and some progress in the study of Greek. The rules of each college name the authors which the candidate shall have read, and in these he is required to undergo a satisfactory examination, to entitle him to admission. The greatest number of pupils are admitted at about the age of fourteen years. The course of instruction varies, in many respects, in the different colleges, but in its principal features, it is the same in all. This course embraces a further study of the Latin and Greek languages, mathematics, natural philosophy, rhetoric, and practice in English composition, moral and intellectual philosophy, and some treatise of natural law and the law of nations. In some colleges, provision is made for the study of Hebrew and of several modern languages; but these are not among the required studies. Some of the colleges have additional departments for instruction in medicine, theology, or law. Harvard university embraces all three of these departments, in which students are prepared for entering on these several professions. The number of professors and teachers in the several colleges varies according to the number of pupils and the funds of the college. In Harvard college, there are in the academical departments eight professors and six tutors and other teachers; in the theological school, two professors in addition to the professors in the other departments, who assist in the instructions of this school; in the law school, two professors, and in the medical school, four. In Yale college, there are five professors and six tutors, besides the professors of the theological and medical schools. In most of the colleges, the officers of instruction are a president, from two to four permanent professors, and from two to four tutors—the tutors being generally young men who devote two or three years to this service before entering on the practice of the professions to which they are destined. From the following list, it will be seen how many colleges in the United States were founded during ten years. The cause of the increase of colleges in America is undoubtedly laudable, as it is the same which prompts every man there to acquire knowledge; but it ought not to be forgotten, that colleges differ entirely from common schools. The latter may be multiplied, and there can hardly be too many of them; but for colleges, the only way to make them truly great is to concentrate in a few, great stores of talent and erudition. In the universities of Europe, donation has been added to donation, until many of them have attained great magnificence.

Table containing the proper title of each College of the United States; the place where it is situated; the time when founded; the number of Academic Instructers; the number of Graduates in 1828; the number of Under-Graduates in 1828-9; the number of Volumes in the College Libraries, and in the social Libraries belonging to the Students.

Name.	Place.	When found-ed.	No. of Acade-mic In-struct-ers	Graduates in 1828.	Under-gradu-ates 1828-9.	Vols. in College Lib.	Vols. in Studs. Lib
Waterville	Waterville,Maine	1820	5	12		1700	500
Bowdoin	Brunswick,Maine	1794	7	20	107	8000	4300
Dartmouth	Hanover, N. H.	1769	8	41	123	3500	8000
Middlebury	Middlebury, Vt.	1800	5	16	81	1646	2322
Vermont Univ.	Burlington, Vt.	1791	5	4	33	1500	1000
Williams	Williamston,Mas	1793	7	18	92	2100	1660
Amherst	Amherst, Mass.	1821	9	40	211	2300	3140
Harvard Univ.	Cambridge, Mass.	1638	15	52	254	30000	4600
Brown University	Providence, R. I.	1764	6	25	98	6000	5750
Washington	Hartford, Conn.	1826	9	15	74	5000	1200
Yale	N. Haven, Conn.	1700	16	52	324	8500	6500
Columbia	New York city	1754	8				
Union	Schenectady,N.Y	1794	9	69	223	5000	8000
Hamilton	Clinton, N. Y.	1812		14			
Geneva	Geneva, N. Y.	1825	5	3	20	390	580
Rutgers	N.Brunswick,N J	1770	6	20	63		
Nassau Hall	Princeton, N. J.	1746		26	43	8000	4000
Univ. of Pennsylv.	Philadelph. Penn.	1755	5	11	50		
Jefferson	Canonsburg,Penn.	1802	4	28	99	*600	1700
Dickinson	Carlisle, Penn.	1783	6	22	62	2000	5000
Washington	Washington, Pen.	1806	3	8	31	400	525
Western Univ.	Pittsburg, Penn.	1820	4	9	41	400	525
Madison							
Alleghany	Meadville, Penn.	1815	2		12	7000	
St Mary's	Baltimore, Md.	1805	13			10000	
Columbia	Washington,D.C.	1821	6		60	3000	1000
Univ. of Virginia	Charlottesville, V	1814	8		131	8000	
Hampden Sidney	Prince Ed.Co. Va.						
William and Mary	Williamsburg, Va	1691	7	3	103	3400	600
Washington	Lexington, Va.	1812		17	23	700	1500
Un. of N. Carolina	Chapel Hill, N.C.	1791	9	13	54		
Un. of S. Carolina	Columbia, S.C.	1802					
Charleston	Charleston, S.C.	1785	8	6	42	1000	
Univ. Geo., or Franklin Coll.	Athens, Geo.	1785	6	28	105	2000	1820
Un. of Nashville	Nashville, Tenn.	1806	7	16	54		
East Tennessee	Knoxville, Tenn.		2	3	21	340	200
Augusta	Augusta, Ky.	1822			82	1500	400
GreenvilleCollege	Greenville, Tenn.	1794			22	3500	
Univ. of Ohio	Athens, Ohio	1802	4	10	60	1842	908
Miami University	Oxford, Ohio	1824	3	9	45		
*Transylvania U.	Lexington, Ky.				50		
W. Reserve Coll.	Hudson, Ohio	1828			30		
Bloomington Coll.	Bloomington,Ind.	1828					
			217	642	2928	129318	69730

For more particulars, see the places where the colleges are established.

* The catalogue of the officers and students in the various departments of Transylvania University, for the year 1830, exhibits a total of 362.—*Nat. Gazette.*

COLLEGE OF CIVILIANS; commonly called *Doctor's Commons*, founded by doctor Harvey, dean of the arches, for the professors of the civil law residing in the city of London. The judges of the arches, admiralty, and prerogative courts, with several other eminent civilians, commonly reside here. To this college belong thirty-four proctors, who make themselves parties for their clients, manage their causes, give licenses for marriages, &c. In the common hall of Doctor's Commons are held several courts, under the jurisdiction of the civil law, particularly the high court of admiralty, the court of delegates, the arches court of Canterbury, and the prerogative court of Canterbury, whose terms for sitting are much like those at Westminster, every one of these holding several court-days, most of them fixed and known by preceding holydays, and the rest appointed at the judge's pleasure.

COLLEGIAL SYSTEM, in ecclesiastical law (see *Church*). In politics, it is opposed to *bureaucracy* (see *Bureau*), and signifies that system of government in which the members of each department of govern-

ment have all a voice in the decision of measures, so that each branch of government is carried on by *collegium*, not by a single president. This system has both great advantages and disadvantages.

COLLEGIANTS. See *Rheinberghers*.

COLLIFLOWER. See *Cabbage*.

COLLIN, Henry Joseph von, born at Vienna, in 1772, was the son of a physician. He rose, by degrees, to an important place in the financial department of the Austrian government. He sacrificed his feeble health, and even his favourite inclination for poetry, to the duties of his office, in which he laboured with an assiduity that at length put an end to his life. He died of a nervous fever in 1811. Having laid a wager with a friend to write a tragedy within six weeks, he produced his first drama, *Regulus*, the plan of which he had arranged before. It was followed by *Coriolanus*, *Polyxena*, *Balbea*, *Bianca della Porta*, *Mæon*, and *De Horatier und Curiatier*. A selection of his smaller poems appeared in Vienna, after his death, with fragments of his epic poem *Rudolf von Habsburg*. His works are characterized by a spirit nourished on the ancient classics, and by a vigorous simplicity. They are sometimes, however, rather frigid and stiff. They are not very finished productions. A complete edition appeared in Vienna, 1814, 6 vols.

COLLIN, Mattheus von, brother of the preceding, in 1808, became professor of æsthetics and philosopy at Cracow. In 1815, he was appointed tutor of the duke of Reichstadt (son of Napoleon). He died in 1824. As a dramatic poet, he ranks below his brother. In 1813, he was editor of the Literary Gazette of Vienna, and, in 1818, of the Vienna Annals of Literature (*Wiener Jahrbucher der Literatur*).

COLLIN D'HARLEVILLE, Jean François, a French dramatist, was born in 1750, at Maintenon, near Chartres. He abandoned the profession of the law, and enriched the French stage with character-pieces, as *L'Inconstant*, *L'Optimiste*, *Les Chateaux en Espagne*, *Monsieur de Crac dans son petit Castel*, *Les Artistes*. In his earliest pieces, he wrote by rule, but subsequently followed the bent of his own genius. In his best piece, the *Vieux Célibataire*, he returned, however, to the established principles of the French theatre. In general, his comedies are blamed as deficient in humour, and his comic characters as wanting in individual traits. In his allegorical poem, *Melpomène et Thalie*, we find natural ease combined with sentimental philosophy, but often prosaic verses. He died in 1806.

COLLINGWOOD, Cuthbert, first baron; a distinguished naval commander, was born at Newcastle-upon-Tyne, in 1748, and educated at the same school with the ex-chancellor Eldon, under Mr Moises. He entered the royal navy in 1761, and in the action of June 1, 1794, was flag-captain on board the Prince, commanded by admiral Bowyer. In 1797, he commanded the Excellent during the battle off cape St Vincent, on the 14th of February in that year, and having, in 1799, been made rear-admiral of the white, was promoted, in 1801, to the red. In 1804, being then vice-admiral of the blue, he assisted in the blockade of Brest harbour; but his most distinguished service was the part he bore in the great victory of Trafalgar, in which his gallant manner of bringing his ship into action, and the skill and resolution with which he fought her, excited the personal admiration of Nelson himself, upon whose lamented fall, the command of the fleet devolved upon him as the senior officer. In this critical situation, admiral Collingwood evinced a degree of promptitude and nautical skill, combined with prudence, which tended much to the preservation of the captured vessels, and proved his judgment as a commander to be not inferior to his courage. For his valuable services on this and other occasions, he was promoted to be vice-admiral of the red, continued in his command of the fleet, and elevated to a barony. His death took place while cruising off Minorca, in the Ville de Paris, on the 7th of March, 1810. His remains were carried to England, and deposited in St Paul's, near those of his friend Nelson. Collingwood appears to have been a model of a naval officer. He was distinguished for zeal, courage, humanity, circumspection, and strictness of discipline. Though hardly any man had more experience in the governing of sailors, he was an enemy to flogging. His letters to his children are full of excellent sentiments and judicious advice. Every young naval officer should be familiar with the Public and Private Correspondence of the Vice-Admiral Collingwood, with Memoirs of his Life, (8vo, 3d edition, London, 1828).

COLLINS, William, a distinguished English poet, was born in 1720 or 1721, at Chichester, where his father was a hatter. He was educated at Winchester school and at Oxford. While at college, he wrote his Oriental Eclogues, which were printed in 1742. Their success was moderate, and, in 1744, the author went to London as a literary adventurer. In 1746, he gave his Odes, Descriptive and Allegorical, to the public; but the sale did not pay for the printing, and the indignant and sensitive poet burned all the unsold copies. Yet among these odes were many pieces which at present rank with the finest lyrics in the language. Pecuniary distress followed this disappointment; and, aided by the ad vance of a few guineas from the booksellers for an intended translation of the Poetics of Aristotle, he was enabled to escape into the country, whence he found means to pay a visit to his uncle, colonel Martin, then with the British army in Germany. The death of this relation, who bequeathed him a legacy of £2000, raised him to comparative affluence; and he immediately returned the booksellers their advance, being reduced, by nervous debility, to an utter incapability of any species of mental exertion. Originally too laxly strung, disappointment, distress, and irregularity had completely disarranged his nervous system. Dreadful depression of spirits followed, for which he had no better remedy than the fatal one of the bottle. Although he did not suffer from absolute alienation of mind, it was thought best to confine him in a lunatic asylum; but, finally, he was consigned to the care of a sister, in whose arms he terminated his brief and melancholy career, in 1756. Collins, by his taste and attainments, appears to have been peculiarly adapted for the higher walks of poetry. His odes, from which he derives his chief poetical fame, notwithstanding the disparaging remarks of doctor Johnson, are now almost universally regarded as the first productions of the kind in the English language for vigour of conception, boldness and variety of personification, and genuine warmth of feeling. The originality of Collins consists, not in his sentiments, but in the highly figurative garb in which he clothes abstract ideas, in the felicity of his expressions, and in his skill in embodying ideal creations. His chief defect is an occasional mysticism. His temperament was, in the strictest meaning of the word, poetical; and had he existed under happier circumstances, and enjoyed the undisturbed exercise of his faculties, he would probably have surpassed most, if not all, of his contemporaries, during the very prosaic period which immediately followed the death of Pope.

COLLOREDO; one of the most illustrious families in Austria, originally from *Friuli*. The members of one branch, Colloredo Mansfeld, have been, since 1763, princes of the empire. To the family of

Colloredo belong, 1. Fabricius, born 1576, who was sent as ambassador by Cosmo II., of Medici, to the emperor Rodolph II.; 2. Rodolph, count Waldsee, field-marshal of the imperial armies, distinguished in the thirty years' war, particularly at Lutzen, and, in 1648, by the defence of Prague; 3. Jerome, born 1775, master-general of the ordnance, commanded in 1813 the first division of the army at Culm (q. v.), died in 1822, while commander-in-chief in Bohemia.

COLMAN, George; a dramatic writer and elegant scholar of the last century; born at Florence, in 1733; his father being at that time British envoy to the grand duke's court. From Westminster school he was removed, at the usual age, to Christ church, Oxford, where he was graduated, as master of arts, in 1758, having previously, in conjunction with his friend Bonnel Thornton, published a series of essays after the manner of the Spectator, under the title of *The Connoisseur*. This lively work, which came out weekly, was continued from Jan. 1, 1754, till towards the close of the year 1756, and tended much to establish his reputation, and procure him the friendship of most of the acknowledged wits of the day. At the desire of his relation, lord Bath, he turned his thoughts to the law, entered himself of Lincoln's Inn, and even went so far as to be called to the bar; but his genius soon turned to the more congenial study of the belles-lettres. His poetical vein had some time previously displayed itself in various occasional pieces; but his first dramatic attempt was made in the year 1760, when his Polly Honeycombe was brought out, with great temporary success, at Drury lane. The year following, he produced the well-known comedy of the Jealous Wife, which not only excited great attention at the time, but, as well as his Clandestine Marriage, has remained an established favourite ever since. The English Merchant, the Oxonian in Town, and a long list of other pieces of less note, but not deficient in merit, followed in succession, in the composition of some of which he was assisted by his friend Garrick. In 1764, his pecuniary resources were much increased by a handsome annuity bequeathed him by lord Bath; and an addition to his fortune, which he acquired three years after, by the decease of general Pulteney, enabled him, the following summer, to purchase Mr Beard's share in Covent-garden theatre. Owing, however, to variances with his partners in the concern, he was induced to dispose of his portion of the property almost as soon as he had acquired it; and to purchase, in lieu of it, the little theatre in the Haymarket, which he bought of Foote for an annuity, and continued in the personal superintendence of it till the year 1790, when a paralytic attack not only deprived him of the use of one side, but entirely plunged his faculties into a hopeless state of derangement. He nevertheless lingered on, in a lunatic asylum at Paddington, till 1794, in which year his decease took place. Besides the writings already enumerated, and a large variety of others of the same class, his classical attainments, and the purity of his taste, are evinced by his elegant and spirited translation of Horace's Art of Poetry, published in 1783, and of the comedies of Terence; to the former of which is prefixed an ingenious Commentary, which places his acumen as a critic in a very respectable point of view.

COLOGNE (in German *Koln*); formerly a free city of the empire, and seat of the electoral chapter of Cologne. The archbishop of Cologne was formerly a sovereign prince, and one of the most important members of the German empire. He resided at Bonn. Cologne is now the capital of the Prussian district Cologne, in the province of Cleves-Berg, the seat of an archbishop, a high-president, the government, and the court of appeal for the Rhenish provinces, a tribunal of the first instance, and many public institutions. It is one of the largest and oldest German cities on the left bank of the Rhine. It is a league in length, in the form of a semi-circle, and was built by Agrippina, the wife of the emperor Claudius. The streets are narrow, dirty, and lonely. With the decline of the Hanseatic league, to which it belonged, this city lost its riches, and, under the French government, its opulent clergy, and beautiful works of art. The great warehouses are still standing as monuments of the past, but only a small number of the new buildings are distinguished for beauty. The handsomest public places are, the new market with its lime-trees, the hay market, and the old market. Cologne has twenty churches, five monasteries, 7060 houses, and upwards of 54,000 inhabitants, besides the garrison. One of the noblest works of Gothic architecture is the unfinished cathedral, in the form of a cross, 404 feet long, and 180 wide. It was in the course of erection from the year 1248 until the reformation. Only the choir, 200 feet high, with the chapel around it, is completed. The nave is supported by 100 columns, of which the middle ones are forty feet in circumference; but it has only two-thirds of its intended height, and is covered with a wooden roof. Each of the towers was designed to be 500 feet high; 250 feet of one is finished, and only twenty-one of the other. Behind the high altar is the chapel of the Magi, built of marble, in the Ionic style. In a magnificent box are deposited a few relics. On the left side of the choir is the golden chamber, with the treasury of the cathedral; but it no longer enjoys its ancient riches. Respecting the original plan of the church, which has been discovered, see George Muller's *Beschreibung* (Description), with nine engravings, large folio, and twenty-six pages of text (1818), and Boisserée's work, *Ueber den Dom zu Koln* (On the Cathedral of Cologne), with engravings (1824). The church of St Gereon has a lofty dome and three galleries. The church of St Cunibert has an altar like the famous altar of St Peter's church in Rome. The church of St Peter has an admirable painting, by Rubens, of the martyrdom of the apostle Peter. In the religious establishment of St Ursula, for noble ladies, the visitor sees, he is assured, the relics of the 11,000 virgins. These are arranged on shelves, and make a formidable appearance. The town house in Cologne has a splendid portico, adorned with two rows of marble columns. The Jesuit's library, though it has been deprived of many works, still contains 60,000 volumes. Many paintings in the monasteries and churches were carried off or destroyed by the French. (See *Boisserée*.) The city, however, still contains some beautiful collections of works of art. It is favourably situated for trade, forming an intermediate point between Germany and Holland, and its commerce, particularly in Rhenish wine, or hock, is very considerable. The trade in cloth, linen, lace, cotton and silk, tobacco and earthen ware is still important; likewise, the distillation of Cologne water, or *eau de Cologne*, of which several million bottles are exported every year. There are fifteen manufactories of it, and the traffic has been constantly increasing since the seven years' war. The bottles are made in Stollberg, three leagues from Aix. As a great city, where magazines can be conveniently established, and military provisions obtained, as a convenient place for crossing the Rhine as an intermediate point between Wesel and Coblentz, as a point of meeting of many roads, and as constituting a part of the basis (q. v.), from which must proceed the operations of the German armies against the Netherlands and France, Cologne is of great military importance The fortifications were restored in 1815.

They are strengthened by a chain of casemated towers, which contain several stories, and each a few cannon. These are placed at some distance from the city, as separate and detached works. Cologne has thus become a strong place, though not, indeed, so important a fortress as Coblentz. The small city of Deutz, on the right bank of the Rhine, opposite Cologne, is fortified, and thus completes the double *tete-de-pont*. In former times, Cologne was a very powerful city, and its university famous. The merchants of Cologne, who settled in London under Elizabeth's reign, gave a great impulse to the English commerce. The old Chronicle of Cologne, written in low German, is a highly interesting work. The *eau de Cologne* is famous throughout Europe and America, though only a small part of what is sold under this name is genuine. One of the best ways of distinguishing the genuine from the spurious is, to rub a few drops on the hand, when the good *eau de Cologne* must neither smell of any spirituous liquor, nor of musk, nor any foreign substance, but only of the ethereal odour proper to the water.

COLOMBIA, The Republic of, in South America, is comprised between lat. 12° 30′ N., and 6° S.; and between lon. 58° and 82° W.; extending over a surface of 1,100,000 square miles. It is bounded on the north by the Caribbean sea, east by Guiana and Brazil, south by Brazil and Peru, and west by the Pacific ocean; on the north-west, it borders on the republic of Central America. The face of the country is remarkable: the western part contains the loftiest ridges of the Andes, while the eastern stretches out into immense plains, intersected by gigantic rivers. Towards the southern part (Quito) are found the celebrated summits of Chimborazo, Antisana, Pichincha, Cotopaxi, Colocache, &c. In this Thibet of the new world, in the valleys of the Andes, raised 10,000 feet above the surface of the ocean, the population of that part of the country is concentrated. Farther north, the height of the mountains is less, and in New Grenada, the Cordillera is divided into three parallel chains, of which only the two lateral ones are of great elevation. Besides the Andes, the principal chain is that of Caracas, running along the north coast, with summits of from 12,000 to 14,000 feet high. The principal lake is lake Maracaibo in Venezuela; the imaginary lake Parima has disappeared from the maps. The most important rivers of Colombia are the Magdalena, the Amazon, and the Orinoco. The Amazon receives all the streams on the eastern declivity of the Andes, south of lat. 3° N. North of that point, they flow into the Orinoco. The immense plains in the east, stretching from Merida to Guiana, and from the chain of the Caracas to the Amazon, are partly inundated and fertilized by the waters of the Orinoco, and partly composed of bare deserts called *llanos*. The climate, in a country of such extent, and of so remarkable a diversity of elevation, must differ exceedingly. In Venezuela, the year is completely divided by the rainy and the dry season, the former commencing in November, and ending in April. New Grenada comprehends a remarkable variety of climate: temperate, even cold and frosty, but healthy on the elevated table lands, the air is burning and pestilential on the sea-shore, and in some of the deep valleys of the interior. At Carthagena and Guayaquil, the yellow fever is endemic. See *New Grenada*, *Venezuela*, and *Quito*.

Among the productions of the vegetable kingdom we mention cacao, Peruvian bark, coffee, and indigo, sugar, cotton, and tobacco. Gold, platina, silver, cinnabar, are among the mineral riches of the republic. The principal articles of export are cacao, indigo, tobacco, coffee, hides, and cattle. The imports are manufactured goods of almost every description. The contraband trade has been carried on to such an extent by the foreign colonies in the neighbourhood, that it is impossible, from the custom-house returns, to form any estimate of the real value of the imports or exports. The Dutch in Curaçoa have been engaged in this trade for nearly two centuries, and the English have recently prosecuted it very extensively from Trinidad, Jamaica, and Guiana; and such are the facilities afforded by the vicinity of these colonies, the extent of coast, and the navigation of the Orinoco, that it will be very difficult to suppress it. In 1825, the exports from La Guayra and Porto Cabello amounted to 1,885,257 dollars, of which more than two-thirds were to the United States; the imports, during the same period, amounted to 3,428,042 dol. M. Mollien (*Voyage dans la Rép. de Colombia*, Paris, 1823) estimates the total amount of exports at 8,000,000 dollars, and the imports at 10,000,000 dol. The ports of La Guayra, Rio del Hacha, Santa Martha, Carthagena, Chagres, Porto Cabello, Panama, and Guayaquil are the most frequented by foreigners. Various plans have been proposed for connecting the two oceans by canals. The small river Chagre, which falls into the Caribbean sea a little west of Porto Bello, is navigable to Cruces, five leagues from Panama. The elevation of the country between Cruces and Panama has never been accurately ascertained, but it is supposed, would interpose no obstacle to a canal for boats, though it might be wholly impossible to construct one for large vessels. A branch of the Rio Atrato, which falls into the gulf of Darien, approaches within 5 or 6 leagues of the Pacific ocean, and the intervening country is quite level, and proper for a canal. Another branch of the Rio Atrato approaches so near to a small river which falls into the Pacific, that a small canal has actually been dug between them, by means of which, when the rains are abundant, canoes loaded with cacao pass from sea to sea. By means of the Orinoco and its tributary streams, all the country south of the chain of Venezuela enjoys an easy communication with the sea. This river forms a natural channel for the conveyance to the ocean of the cattle and produce raised on the banks of the Apure, and its wide-spreading branches. By means of the Meta, also, a navigable communication is opened almost to the very foot of the Andes. The flour, and other productions of an extensive district near Bogota are conveyed to market by the Orinoco, in preference to the Magdalena.

The republic is composed of the three colonial governments of Quito, New Grenada, and Venezuela, and, by the law of June 23, 1824, is subdivided into twelve departments, namely,

1. The Isthmus,	7. Cundinamarca,
2. Magdalena,	8. Boyaca,
3. Zulia,	9. Apure,
4. Venezuela,	10. The Equator,
5. Orinoco,	11. Guayaquil,
6. Cauca,	12. Asuay.

These are composed of 49 provinces, which are again subdivided into 218 cantons, and each canton into municipalities. The population may be estimated at about 2,711,000. It is composed of whites, Indians, mestizoes, negroes, and mulattoes; one-half being of the mixed races, one-fourth creoles, one-eighth Indians, and the remainder, negroes and Europeans. Travellers have observed that beauty, vigour, and courage are more common in the mixed races. The creoles or whites, as they are called, have in general some Indian or black blood in their veins. Those on the sea-coast have the Spanish features, but little beard; those of the more elevated regions resemble the inhabitants of the north of Europe, but they commonly have the black, stiff hair of the Indians. The goitre is very common in some parts of Colombia;

the pure Indians and negroes, however, are not afflicted with it. The negroes are found principally in the maritime parts of the country. The new government has decreed that from the year 1860 all slavery shall cease in the republic. The principal towns besides those already mentioned are, Bogota (the capital), Caracas, St Thomas, Quito, Popayan, Cuença, Riobambo, Otobalo, Merida, Cumana, Maracaibo, Barcelona, Guanare, and Truxillo. All the Indians have been declared free since the revolution. Many of the Indian tribes have been brought into subjection to the whites, and have become partially civilized by the labours of the Catholic missionaries. They are allowed to live in villages by themselves, and to be governed by magistrates of their own choice. The principal Indians remaining unsubdued are the Coahiros, who are about 30,000 in number, and occupy a tract along the coast to the west of the gulf of Maracaibo. They often make inroads upon the neighbouring settlements. The Guaraunos, who inhabit the islands formed by the mouths of the Orinoco, are about 8000 in number. The Caribs occupy the coast of Spanish Guiana, between the mouths of the Essequibo and the Orinoco. Besides these tribes, all the country on the Orinoco above the cataracts of Atures, and indeed all the immense tract between the sources of the Orinoco and those of the Amazon, are inhabited by nations of savages, who have hitherto resisted all the efforts of the Spaniards to civilize and subdue them. The Catholic religion has been declared the established religion of the state; but all others are tolerated. The establishment is composed of two archbishops and ten bishops: the clergy are rich and powerful; some of them distinguished themselves in the revolution by their democratic principles. Colombia has four universities—at Quito, Bogota, Caracas and Merida; that of Bogota is merely a theological seminary; the three others are intended for students in the other branches. Provision has also been made for the establishment of primary schools, high schools, and provincial colleges; but the unsettled state of the country allows but little to be effected.

Historical Sketch. The republic of Colombia is of very recent origin, although the history of the three states, by the union of which it has been formed, is coeval with the era of Columbus. Previously to the period of the revolutions, they were known by the names of the vice-royalty of New Grenada, the captain-generalship of Caracas, and the presidency of Quito. Of their annals prior to the union, a brief sketch will here be given.

Quito. The provinces of Quito, having formed a component part of the Peruvian empire at the time of the Spanish conquest, continued to depend directly on the government of Peru until Sept., 1564, when they were erected into a separate presidency. In 1717, the government was suppressed, and the country incorporated into the vice-royalty of New Grenada. In 1722, it was again separated, and remained so until it became a part of Colombia. The revolution commenced August 10, 1809, when the president, count Ruiz de Castilla, was deposed, and a *junta soberana* appointed to administer the government. He was reinstated the November following, and a second revolution took place in September, 1810. But, in a few months afterwards, the Spaniards, under Montes, regained Quito, and continued to hold the presidency until May, 1822, when the victory of Pichincha, gained by general Sucre, put an end to their power.

New Grenada. The coasts of New Grenada, which border on the Caribbean sea, were first visited by Columbus, during his fourth voyage. Ojeda and Amerigo Vespucci followed Columbus in exploring parts of the coast, and Vespucci gave the first regular description of the people who inhabited its shores. In the year 1508, Ojeda and Nicuessa obtained extensive grants in this and the adjoining country. Ojeda had the country from cape de la Vela to the gulf of Darien, which was to be styled *New Andalusia*; and Nicuessa was appointed to govern from the gulf of Darien to cape Gracias a Dios; the territory included within these points to be named *Golden Castile*. The province of Terra Firma, including both the grants of Nicuessa and Ojeda, was given by a subsequent charter, in 1514, to Pedro Arias de Avila. Under the orders of Avila, the western coast of Panama, Veragua, and Darien was explored as far north as cape Blanco, and the town of Panama was founded. In 1536, Sebastian de Benalcazar, one of the officers who accompanied Pizarro in the expedition to Peru effected the conquest and colonization of the southern internal provinces of New Grenada; whilst Gonzalo Ximenes de Quesada, who had been sent by Lugo, the admiral of the Canaries, overran the northern districts from Santa Martha. They met with considerable opposition from the natives, but finally succeeded in reducing the country, and the whole was formed into one government, and put under a captain-general, appointed in 1547; to check whose power the royal audience was established, of which he was, however, made president. In the year 1718, New Grenada was formed into a vice-royalty. This form of government continued until 1724, when the captain-generalship was restored; but, in 1740, the vice-royalty was re-established. Under this system, the evils of which were of a very grievous nature, the inhabitants of New Grenada continued until the invasion of Spain by the French. The desire of independence had long been prevalent; but it was not until 1810, that it began to be publicly avowed. The juntas then chosen were composed of persons generally favourable to independence. A congress from the different provinces or departments of the vice-royalty soon afterwards assembled, and, in 1811, a formal declaration of independence was made. The country has, since that period, passed through many vicissitudes of fortune. The cause of freedom and that of the royalists have been alternately triumphant, and many frightful scenes of rapine and bloodshed have occurred. In 1816, a decisive action was fought between the independents and a Spanish army under Morillo, which ended in the total defeat of the former, and the dispersion of the congress. After remaining under the dominion of the royalists for three years, Grenada was again emancipated by the army of Bolivar, who entered Santa Fé in August, 1819. In December, 1819, a union was effected with Venezuela into one republic.

Caracas, or *Venezuela.* The coast of this country was originally discovered by Columbus, in 1498, during his third voyage. Several attempts being made to colonize, the Spanish government came to the determination of settling the country under its own direction. These expeditions were managed by priests, and generally ill conducted; and it was found necessary to subdue the inhabitants by force. When this was partially effected, and the Spanish settlers were placed in some security, the proprietorship was sold, by Charles V, to the Welsters, a German mercantile company. Under their management, the Spaniards and the natives suffered the most grievous tyranny. The abuses of their administration becoming at last intolerable, they were dispossessed, in 1550, and a supreme governor, with the title of *captain-general*, was appointed. From this period until the year 1806, Caracas remained in quiet subjection to the mother country. In 1806, a gallant but

unfortunate attempt was made to liberate her from the yoke. General Miranda, a native of Caracas, formed for this purpose an expedition partly at St Domingo and partly at New York. A landing was effected on the coast, but the force proved wholly inadequate to the designed object. Many were taken prisoners by the Spanish authorities, and several suffered death. The defeat was decisive, and gave an effectual blow, for the time, to the project of independence. In 1810, however, Spain being overrun by the French troops, the opportunity was seized by the principal inhabitants to establish a freer form of government. For this purpose, a *junta suprema*, or congress, was convened in Caracas, consisting of deputies from all the provinces composing the former captain-generalship, with the exception of Maracaibo. At first, they published their acts in the name of Ferdinand VII.; but the captain-general and the members of the *audiencia* were deposed and imprisoned, and the new government received the title of the *confederation of Venezuela*. The most violent and impolitic measures were now taken by the regency and cortes of Spain towards the people of this district. The congress, finding the voice of the people decided in favour of independence, issued a proclamation, on the 5th of July, 1811, formally declaring it. A liberal constitution was established, and affairs wore a favourable aspect for the cause of freedom, until the fatal earthquake of 1812, which, operating on the superstition of the people, led to a great change in the public opinion. Monteverde, a royalist general, taking advantage of the situation of affairs, marched against Caracas, and, after defeating general Miranda, compelled the whole province to submit. In 1813, however, Venezuela was again emancipated by Bolivar, who was sent with an army by the confederation of Grenada. In 1814, he was, in his turn, defeated by Boves, and compelled to evacuate Caracas. In 1816, he again returned with a respectable body of troops, and was again defeated. Undismayed by reverses, he landed again, in December of the same year, convened a general congress, and defeated the royalists in March, 1817, with great loss. In the month following, however, Barcelona was taken by the Spanish troops. The contest was maintained for some time afterwards with various success. Bolivar was invested by the congress with ample powers, the situation of the republic requiring the energy of a dictator. On the 17th of Dec., 1819, a union between the republics of Grenada and Venezuela was solemnly decreed, in conformity with the report of a select committee of deputies from each state. This confederation received the title of the—

Republic of Colombia. In conformity with the fundamental law, the installation of the general congress of Colombia took place on the 6th of May, 1821, in the city of Rosario of Cucuta. The first subject considered by this body was the constitution; and it was finally determined that the two states should form one nation, on the central system, under a popular representative government, divided into legislative, executive, and judicial. Bolivar, the president, was, in the mean time, actively engaged in bringing the war to a close. On the 24th of June, 1821, was fought the memorable battle of Carabobo, in which the royalist army was totally defeated, with the loss of their artillery, baggage, and upwards of 6000 men. In the fall of 1822, Bolivar completed, by the capture of Panama, the overthrow of Spanish power in this quarter; the only remaining memorial of which was Porto Cabello, which held out until Dec. 1823. For, by the successes of the troops sent against Quito, the Spaniards had been compelled to surrender their authority in the south. Bolivar defeated Murgeon at Curiaco, in April, 1822, and, in May, Sucre gained the splendid victory of Pichincha, immediately after which the Spanish authorities capitulated. A long course of victory having thus delivered Colombia from the Spaniards, Bolivar marched into Peru, in 1824, at the head of an army of 10,000 men, to effect the liberation of that country. Meanwhile, the acknowledgment of the independence of Colombia, by the United States, in 1823, and, in successive years since then, by Great Britain and the other governments of Europe, except Spain, gave new activity to her commercial relations. The government was administered, in the absence of Bolivar, by the vice-president, general Francisco de Paula Santander; and from the adoption of the constitution until 1826, the legislative and executive authorities, relieved from anxiety with respect to Spain, strenuously exerted themselves in various domestic improvements. The finances were placed on a more solid footing; public education was carefully fostered; and institutions, adapted to the new order of things, everywhere arose. To all outward appearance, the republic was rapidly acquiring consistency and stability, when the insurrection of Paez, in Venezuela, produced a fatal change. Paez, being one of the most distinguished officers of the revolution, received the command of the department of Venezuela. In the execution of a law for enrolling the militia in the city of Caracas, he gave so much offence to the inhabitants by his arbitrary conduct, that they obtained an impeachment against him before the senate. Being notified of this, in April, 1826, and summoned to appear and take his trial, he refused obedience to the summons, placed himself at the head of the troops, and became the nucleus of a strong party in ancient Venezuela, which, dissatisfied with the central system, demanded a reform of the government, some desiring that Venezuela should again be separate from New Grenada, others wishing for a federal constitution, like that of the United States. In consequence of this insurrection, the north-eastern departments of the republic remained virtually independent of the rest, until Jan., 1827, when Bolivar returned to Colombia, and succeeded in restoring the national authority, by promising to assemble a convention for the reform of the constitution. Meanwhile, various disorders broke out in other parts of the republic, the departments formed out of New Grenada alone continuing faithful to the constitution. Congress assembled in May, and, in June, passed a decree of general amnesty, and, in August, another decree for convoking a grand convention at Ocana, for amending the constitution. Bolivar and Santander, having been re-elected president and vice-president, were duly qualified, the latter in May, and the former in Sept., 1827, and affairs remained tranquil until the convention assembled at Ocana, in March, 1828. The violence of parties, and the disturbed state of the country, prevented the convention from effecting anything, and it soon separated. These events finally resulted in Bolivar's assuming absolute authority, and, in effect, abolishing the constitution of the republic. Whether he took the step solely in order to terminate the public disorders, or whether he himself, as others allege, created them by his intrigues, in order to afford a plausible pretext for his usurpation, it remains for time to show. What appears on the face of things is, that the various municipalities drew up addresses to him, in which he was requested and invited to assume the supreme command. The earliest of these was the act of the municipality of Bogota, dated June 13, 1828; and others followed in quick succession from every part of the country. Bolivar was not slow in obeying the call, and organized the new govern-

ment by appointing a council of ministers and a council of state for its administration, with D. Jose M. de Castillo for president of each council. This usurpation roused the hostility of the republican party, some of whom, unfortunately, conspired to assassinate Bolivar. The attempt was made Sept. 25, 1828, but failed, owing to the bravery of the officers and attendants about his person, among whom his aid, colonel Ferguson, was killed. Generals Padilla and Santander were accused of participating in the plot, and condemned to death by a special tribunal. Padilla was executed under his sentence; but the punishment of Santander was commuted for banishment. The immediate agents in the attempt were apprehended, and suffered the punishment of death. This did not prevent general Ovando from raising the standard of opposition in Popayan, and gathering so large a force as to demand the immediate presence of Bolivar to resist it. At the same time, a declaration of war was issued against Peru, in consequence of difficulties between the two countries, arising out of the attempt of Bolivar to make himself perpetual president of Peru. Peace was made between the two countries in 1829. In October of the same year, general Cordova began an insurrection in Antioquia, and in January, 1830, Venezuela declared herself independent of Colombia, at the instigation of general Paez. Bolivar, about the same time, solemnly declared, at Bogota, every imputation against him as aiming at a crown to be false, and retired to his country seat, after having refused to take any part in public affairs. His death, which took place in December of the same year, tended to quell the political commotions, and to restore tranquillity in the disturbed provinces. In 1831, general Paez was elected president of Venezuela; in the same year, general Flores was named constitutional president of Quito or Equator; and in 1832, Santander was elected provisional president of New Grenada. Regarding the future fortunes of these states, we cannot at present speculate. See the articles *South America, New Grenada, Quito, Venezuela, Bolivar,* &c. The following works may be consulted relative to Colombia: Humboldt's *Tableaux de la Nature; Personal Narrative* of the same; Mollien's *Travels in Colombia,* Paris, 1823, (translated into English, 1825); *Colombia,* 2 vols., 8vo, London, 1822.

COLON. See *Punctuation.*

COLONEL; the commander of a regiment, whether of horse, foot, or artillery. There were times when, in some armies of the European continent, regiments were commanded by generals; but this is no longer the case.

COLONIAL ARTICLES. See *Commerce.*

COLONIZATION SOCIETY, American. One sixth part of the population of the United States consists of blacks. Of these, 1,852,126 are slaves (See *Slavery*); the remaining 280,000 are called free. In some of the states, the free black population is oppressed by legal disabilities, and, in all, is virtually excluded from the enjoyment of some of the most important civil privileges, by the prejudices of the European race. A caste is thus formed in the state, of individuals below the salutary influence of public opinion, cut off from all hope of improving their condition, degraded, ignorant and vicious themselves, and leaving the same legacy of humiliation and shame to their children. A common descent and colour unite them, on the other hand, with the slaves, and render them the fit agents for fomenting insurrections among them. On this account, they have become objects of suspicion and alarm in the slave-holding states; and the owners of slaves consider it impolitic and dangerous to emancipate their negroes, since they contribute to increase the strength of a dangerous class, without deriving any important benefits themselves from the change. This state of things gave rise to the colonization society. So early as the year 1777, the plan was proposed by Jefferson, in the legislature of Virginia, of emancipating all the slaves born after that period, educating them, the males to the age of twenty-one, the females to that of eighteen, and establishing colonies of them in some suitable place. The plan of colonization has been subsequently approved by the legislatures of nine states; but it was first carried into execution by individuals. The society was formed in 1816. "Its object is, to promote and execute a plan for colonizing (with their consent) the free people of colour residing in that country, either in Africa or such other place as congress shall deem expedient;" to prepare the way for the interference of the government, by proving that a colony can be established and maintained without the opposition of the natives; that the colonists can be transported at a moderate expense; that an important commerce might be thus established, and the slave-trade in consequence discouraged. The practicability of the plan being proved, it was intended to extend it to the entire removal of the whole black population. In 1817, two agents were sent by the society to examine the western coast of Africa for a suitable spot for the colony. They selected a position in the Sherbro, and, in February, 1820, the first vessel was despatched with eighty-eight colonists. They were conducted by an agent of the society, and accompanied by two agents of the government. The expedition arrived on the low coasts in the rainy season; the three agents, and a great number of the colonists, were carried off by the fever of the climate, and it became necessary to abandon the colony. In 1821, another vessel was sent out, with twenty-eight colonists, and cape Mesurado was purchased as a more favourable position. It has a fine harbour, the climate is pleasant, and the soil is fertile, producing sugar-cane, indigo, and cotton without cultivation. In 1823, the emigrants amounted to 150, of whom several were recaptured Africans, taken from vessels seized for a violation of the laws of the United States. In 1828, the colony contained more than 1200 inhabitants. It has received the name of Liberia, and the town at the cape is called Monrovia, in honour of the ex-president Monroe. The possessions of the society extend 150 miles along the coast, and a considerable distance into the interior. Eight stations or settlements have been established, at the request of the native chiefs, who construct the necessary buildings for the accommodation of the colonists at their own expense. The colonists employ several hundred native labourers: and they are, in general, in very comfortable circumstances. Several schools have been established, and the moral and religious character of the inhabitants is excellent. By the constitution of Liberia, all persons born in the colony, or residing there, shall be free, and enjoy all the privileges of the citizens of the United States; the agent of the society possesses the sovereign power; the judiciary consists of the agent and two justices appointed by him; the other officers are chosen by the colonists. The common law is adopted, with the modifications already introduced in the United States, and others required by the peculiar situation of the colony. The party in any action at law is entitled to trial by jury. The commerce of the place is increasing. Rice, palm-oil, wax, and some coffee, are exported. The supreme control of the government is to remain in the hands of the society until the settlers are in a condition to govern themselves.

While the benevolent exertions of the society have been thus successful in Africa, its influence on the public sentiment in America has been very salutary. The congress of the United States had already abolished the slave-trade, in 1808, as soon as the restrictions imposed by the constitution were removed. Through the representations of the colonization society, the act of March 3, 1819, was passed, authorizing the president to make arrangements for the support and restoration of recaptured negroes. May 15, 1820, the slave-trade was declared to be piracy, and punishable with death. The society has succeeded in overcoming the fears and prejudices of its former opponents; some of the most eminent statesmen in the slave-holding states have become earnestly engaged in the cause; the legislatures of several of the same states have contributed funds for its assistance; and, in 1828, the number of auxiliary societies amounted to ninety-six. The experiment has convinced the blacks themselves of the great benefits they must derive from their colonization, and the number of applicants for transportation has been constantly increasing. The emancipation of slaves is also facilitated, now that provision is made for them. In 1828, 100 were manumitted, and, in 1829, 200 were offered to the society, on condition that they should be sent to Liberia. Information concerning the history and objects of the society may be found in its annual reports published at Washington, in the African Repository also published at Washington, in the North African Review, January, 1824, and January, 1825 (Boston), and in the American Quarterly Review, No. 8, December, 1828.

COLONNA, Vittoria, the most renowned poetess of Italy, was the daughter of Fabrizio Colonna, high-constable of Naples; and born in 1490, at Marino, a fief belonging to the family. At the age of four years, she was destined to be the wife of Fern. Franc. d'Avalos, marquis of Pescara, a boy of the same age. The rare excellences, both of body and mind, with which nature and a most careful education had adorned her, made her an object of universal admiration, so that even princes sued for her hand. But, faithful to her vow, she gave her hand to the companion of her youth, who had become one of the most distinguished men of his age. They lived in the happiest union. When her husband fell, in the battle of Pavia (1525), Vittoria sought consolation in solitude and in poetry. All her poems were devoted to the memory of her husband. She lived seven years, by turns at Naples and at Ischia, and afterwards retired into a monastery, first at Orvieto, and finally at Viterbo. She afterwards abandoned the monastic life, and made Rome her abode, where she died in 1547. Her *Rime* are not inferior to the best imitations of Petrarch. The finest are her *Rime Spirituali* (Venice, 1548, 4to), which display deep feeling and pure piety. A collection of all her poems appeared in 1760, at Bergamo.

COLONY. Before America and the way by sea to the East Indies were discovered, the states of Europe, in the middle ages, with the exception of the Genoese and of the Venetians, had no foreign colonies. The Mediterranean afforded a passage to an extensive commerce, which was chiefly carried on by the small Italian states, particularly Venice and Genoa, and the sea-ports of Catalonia. The commerce between India and the continents of Europe and Asia was carried on chiefly by way of Ormus and Aden, on the Persian and Arabian gulfs. Aleppo, Damascus, and the harbour of Barut, and especially Egypt, were the chief emporiums. As long as commerce was confined to land-carriage, and conducted by small states, it never could have the importance which it assumed in the hands of the Spaniards and Portuguese, after America was discovered and the passage by sea to the East Indies effected. When the Portuguese nation first commenced its discoveries, it was in the vigour of its heroic age. By continual wars with the Moors, first in Europe and afterwards in Africa, the martial spirit of the nation acquired that chivalrous energy which impelled it to romantic enterprises, particularly as the most violent hatred against the infidels was connected with it. From 1410, when Henry the Navigator (q. v.) commenced his voyages and discoveries on the western shore of Africa, till his death, in 1463, the Portuguese discovered, in 1419, Madeira; in 1439, cape Bojador; in 1446, cape Verd; two years later, the Azores; in 1449, the cape Verd isles, and penetrated to Sierra Leone. In 1484, Congo was visited. Bartolomeo Diaz reached (1486) the cape of Tempests, which king John called the *cape of Good Hope*. Soon afterwards, under the reign of king Emanuel the Great, a daring adventurer led the Portuguese by that route to the East Indies. Vasco da Gama landed, May 20, 1498, at Calicut, on the coast of Malabar. The Portuguese did not succeed without a struggle, particularly with the Moors, who had previously been in possession of the inland trade of India, in establishing settlements on the coast of Malabar, and nothing but the lofty spirit and the determined valour of the first viceroy, the great Almeida of Abrantes (1505—9), and of his still greater successor, Alphonso Albuquerque (1515), could have founded, with such feeble means, an extensive dominion in India; the chief seat of which, from 1508, was Goa. The Portuguese garrisoned only some strong places along the coasts of the continent and the islands, as commercial posts, among which, on the coast of Africa, Mozambique, Sofala, and Melinda; in the Persian gulf, Ormus and Mascat; on the Malabar coast, besides Goa, Diu, and Daman; on the Coromandel coast, Negapatam and Meliapoor (St Thomas), and Malacca on the peninsula of the same name, were the most important. After the year 1511, colonies were established also upon the Spice islands; after 1518, in Ceylon; the latter of which soon became considerable. Those in Java, Sumatra, Celebes, and Borneo remained less important. Brazil, though discovered in 1500, by Cabral, did not become of consequence until more recently. On the other hand, the commercial connexions formed, in 1517, with China, and, in 1542, with Japan, were, for a long time, a source of riches to the Portuguese. Till that time, the Portuguese had been in the undisputed possession of all the East Indian commerce. In order to prevent difficulties with Spain, all the discoveries which should be made beyond cape Bojador were adjudged, in 1481, by a papal bull of Sextus IV., to the Portuguese. A dispute with Spain concerning the possession of the Moluccas was adjusted, in 1529, by an agreement that Charles V. should sell his claims, for 350,000 ducats, to the crown of Portugal. But, after Philip II., in 1580, had made himself master of Portugal, the East Indian colonies also fell under the dominion of the Spaniards, and, soon after, into the power of the Dutch. The ability of some great men, and the heroic spirit of the nation, had founded the power of Portugal in the East Indies. It fell when the character of the people degenerated, when a low trading spirit took the place of heroism, even among the higher classes of the nation; when avarice, luxury, and effeminacy increased, and the influence of the clergy, and particularly of the inquisition, became predominant. To these causes of decline were added the annexation of Portugal to

Spain, and the neglect of the Portuguese colonies, resulting from this union. Moreover, all the enemies of Spain, particularly the Dutch, were now also enemies of Portugal, and the fabric of Portuguese greatness in the East Indies could not be prevented from hastening to ruin. Portugal never carried on commerce with the East Indies by means of a privileged society, but by fleets which started every year, in February or March, for India, under the protection of the government. The coasting trade in India, which was confined to a few seaports, the Portuguese, in very early times, endeavoured to monopolize; but they contented themselves with carrying goods to Lisbon, without attempting to export them to the rest of Europe. The disadvantages of this system were soon felt by their marine, particularly as it allowed the Dutch to become dangerous rivals. From this time, the Portuguese maintained a place among the important colonial powers of Europe only by the possession of Brazil. It was fortunate, as regarded the colonization of this country, that its gold mines were not discovered till 1698, its wealth in diamonds not until 1728, and that its trade was not monopolized by two companies till the time of Pombal.

At about the same time as the Portuguese, the Spaniards also became a colonial power. October 11, 1492, Columbus discovered the island of San Salvador, and, in his three following voyages, the group of the West India islands, and a part of the American continent. St Domingo or Hispaniola became of great importance to Spain, on account of its gold mines. Attempts were also made to colonize Cuba, Porto Rico, and Jamaica, from 1508 to 1510. The great kingdom of Mexico was subjected by Cortes, 1519—1521; Peru, Chile, and Quito, 1529—1535, by Pizarro and his followers: in 1523, Terra Firma, and 1536, New Grenada, were conquered. The nature of the countries of which the Spaniards took possession, decided, from the first, the character of their colonies, which afterwards continued unchanged in the main. They did not produce the various precious articles of the East Indies, instead of which the Spaniards found gold and silver, the great objects of their desire. While, therefore, the colonies of the Portuguese in India were, from the beginning, commercial, those of the Spaniards in America were always mining colonies. It was not till later times that they received some modifications of this character. To maintain their extensive dominion, particularly over the wild nations of the interior, the Spaniards endeavoured to convert the Indians to Christianity by the establishment of missions, and to induce them to live in permanent abodes. The government of the colonies, in its fundamental traits, was settled in 1532, during the Reign of Charles V. A council of the Indies in Europe, viceroys, at first two, afterwards four, together with eight independent captains-general, in America, were the heads of the administration. The *real audiencia* was the council of the viceroys or captains-general. Cities were founded, at first along the coasts, for the sake of commerce and as military posts; afterwards also in the interior, in particular in the vicinity of the mines; as Vera Cruz, Cumana, Porto Bello, Carthagena, Valencia, Caracas; Acapulco and Panama, on the coast of the Pacific; Lima, Conception, and Buenos Ayres. The whole ecclesiastical discipline of the mother country was transferred to the colonies, except that, in the latter, the church was much more independent of the king. The precious metals were the chief article of export from the colonies, and the commerce in them was subjected to very rigorous inspection. The intercourse with Spain was confined to the single port of Seville, from which two squadrons started annually—the *galleons*, about twelve in number, for Porto Bello, and the fleet, of fifteen large vessels, for Vera Cruz. While, therefore, the commerce was not expressly granted, by law, to a society, it remained, nevertheless, entirely in the hands of a few individuals. Spain had taken possession of the Philippine isles in 1564, and a regular intercourse was maintained, from 1572, by the South sea galleons, between Acapulco and Manilla; but, owing to the great restrictions on commerce, those islands, notwithstanding their advantageous situation, were an expense to the crown, instead of being profitable to it: religious considerations alone prevented them from being abandoned.

Far greater activity and political importance were communicated to the colonial commerce of Europe, when two commercial nations, in the full sense of the word,—the Dutch and the English,—engaged in it. The Dutch, during the struggle for their independence, first became the formidable rivals of the Portuguese, then subjected to the Spanish yoke. The participation of the Dutch in the colonial system imparted to the colonial commerce a new impulse and a far greater extent. They had already, for some time, carried on the trade in East India merchandise between Lisbon and the rest of Europe, and had seen, during the struggle for their independence, the weakness of the Spanish naval force. The tyranny of Philip II. forced them to a measure which they would not readily have adopted from choice, that of fighting their enemies in the East Indies. The intercourse of the Dutch with Lisbon had already been prohibited by Philip in 1584; the prohibition was revived, in 1594, with the utmost severity, and a number of Dutch vessels in the harbour were seized. Excluded from all trade in the productions of India, they had no alternative left, but to resign this branch of commerce entirely, or to import directly from India the articles which were refused to them in Europe. Encouraged by Cornelius Houtmann, a well-informed man, who had made several unsuccessful attempts to find a northern passage to the East Indies, the "company of remote parts," composed of merchants of Amsterdam and Antwerp, equipped four vessels, which set sail for the East Indies, April 2, 1595, under the command of Houtmann and Molenaer. Though the profits of the first expedition were not so great as had been expected, the weakness and unpopularity of the Portuguese, who were universally hated in India, were discovered, and similar companies were soon formed, which sent fleets to this rich region. The number of competitors in India was thus immoderately increased, and the continued hostility of the united Spanish and Portuguese power induced the states-general, not many years afterwards, to unite the separate societies into one, called the *Dutch East India company*, which, by a charter granted March 20, 1602, and renewed afterwards at different times, received not only the monopoly of the East India trade, but also sovereign powers over the conquests which they should make and the colonies which they should establish in India. The superintendence which the states-general retained for themselves was little more than nominal. The colonial system of the Dutch in the East Indies was rapidly developed, and early received the decided character which it has ever since retained. Their colonies in the East Indies became commercial colonies; and the Moluccas and the great Sunda isles, being more easily defended than the continent of India, which was then subjected to powerful rulers, became the principal seat of their power. This was undoubtedly the chief cause of their continuing so long in a flourishing condition, as they required only the dominion of the sea to maintain them. In 1618, the newly built Batavia was made,

by the governor-general Koen, the capital of the Dutch possessions. The Dutch now rapidly deprived the Portuguese of all their East Indian territories, not, indeed, without resistance, but with little difficulty; and, in 1611, they found means to become exclusive masters of the trade to Japan. Thus the Portuguese retained but a few insignificant possessions in Goa, the melancholy remains of their former grandeur. About the middle of the 17th century, the power of the Dutch reached its highest point: particularly after they had effected the establishment of a colony at the cape of Good Hope, which, in 1653, afforded an excellent bulwark for their East India possessions, and had taken Ceylon from the Portuguese in 1658. All the Dutch colonies in the East Indies were under the governor-general of Batavia, to whom were subordinate several governments, directories, commanderies, and residences, the titles and number of which varied with the importance of the different colonies at different times. In Europe, the colonial administration was conducted by a council of ten *Bewindhebbers*, who were chosen from a body of sixty directors. In 1621, the Dutch established also a West India Company which, at first, made extensive conquests in Brazil (1630—1640), but lost them again in 1642. Their settlements on some of the smaller West India islands, as San Eustatia, Curaçoa, Saba, and San Martin (1632—49), were more permanent, and were particularly important on account of the smuggling trade there carried on. On the continent, only Surinam, Paramaribo, Essequibo, and Berbice were in the hands of the Dutch in 1667.

Nearly at the same time with the Dutch, the English made their appearance as a colonial power, at first with far inferior success. They first visited remote seas during the reign of queen Elizabeth. After many fruitless attempts to find a north-east or north-west passage to the East Indies, English vessels found their way round the cape of Good Hope to the East Indies in 1591. Dec. 31, 1600, Elizabeth granted a charter to a society instituted for the purpose of carrying on an exclusive trade beyond the cape and the straits of Magellan. Their commerce with India, however, was not, at first, important. They established only single factories on the continent. The island of St Helena, which was taken possession of by them in 1601, was almost their only permanent possession in that quarter of the world. During the reign of Charles I., in 1623, the English East India company was driven from the Spice islands by the Dutch, and retained, besides fort St George built in 1620, at Madras, only some factories on the coasts of Malabar and Coromandel. From 1653 to 1658, the company seemed to be entirely dissolved, until it was revived and supported against the Dutch by Cromwell. But, during the reign of Charles II., it again fell into decay, chiefly by its own fault. A new East India company, with a charter from the crown, was formed in 1698, and the union of both in 1708, as it then seemed, alone saved the East India trade from total ruin. The possessions of the English in India were limited almost entirely to Madras, Calcutta, and Bencoolen, and the vast British empire there dates only from the middle of the 18th century. The ruin of the Mogul empire in India, which commenced in internal disturbances after the death of Aureng-Zebe (1707), and was completed by the incursions of Nadir Shah (1739), afforded the opportunity for the growth of British power, as the British and French interfered in the contentions of the native princes and governors. The French, under Labourdonnaye and Dupleix, appeared, at first, to maintain the superiority; but the British succeeded, after driving both of them from India, in acquiring the ascendency in the Carnatic; and, in the middle of the last century, they extended their dominion, under the command of Laurence and Clive (q. v.). By the destruction of Pondicherry, they secured their superiority on the coast of Coromandel; and the victory of Clive at Plassey, June 26, 1756, laid the foundation of their exclusive sovereignty in India. By the treaty of Allahabad, Aug. 12, 1765, Bengal was surrendered to the British by the titular great Mogul, and the nabob of the country retained but a shadow of dominion. The fall of the empire of Mysore, the dominions of Hyder Ali and Tippoo Saib, may be considered as completely establishing the exclusive sovereignty of the British in India. The Mahrattas, with whom the British first waged war in 1774, remained the only formidable enemies of the company. The British territory in India was now of an extraordinary extent, including the whole eastern shore, the greater part of the western, and all the countries on the Ganges and Jumna to Delhi. (For the recent changes in the British and Dutch East Indies, see *India* and *East India Companies*.) Almost at the same time with the first attempts of the English to participate in the East India commerce, the London and Plymouth companies were established (1606) by James I.; the former for the southern, the latter for the northern half of the North American coast; and, in the same year, Jamestown, on Chesapeake bay, was founded. The colonies in a country which possessed neither gold nor other productions of nature or art particularly adapted for commerce, necessarily became agricultural colonies. During the domestic disturbances in England, which caused much emigration, the North American colonies greatly increased; separate colonies were formed, and, after the dissolution of the London company in 1625, and of the Plymouth company in 1637, received constitutions containing many republican principles. In later times arose the English establishments in the West India islands, including Barbadoes, half of St Christopher's (1625), and, soon after, many smaller islands. Yet the West India possessions did not become important as plantations until the sugar-cane was introduced into Barbadoes (1641) and into Jamaica in 1660. This island had been taken from the Spaniards in 1655. The British colonies in North America prospered much more than those in the West Indies, even after the cultivation of coffee had been introduced into the latter in 1732. In the same year, Georgia, the youngest of the thirteen provinces, was founded. Newfoundland (in French, *Terre-neuve*) also became important for its cod-fisheries, and Canada was surrendered to Britain at the peace of Paris, in 1763. In 1764 began the dispute between Britain and its North American colonies, on the question, whether the former had the right to impose taxes on the colonies when they were not represented in the British parliament; and, April 19, 1775, commenced the war, in which the Americans were assisted by France, and which terminated with the acknowledgement of the independence of the thirteen provinces. By the peace of Paris (1783), the first independent state in the new world was recognised in Europe. The power of Britain was not broken by this event; its commerce with the new republic increased rapidly. Canada and Nova Scotia were now of the greatest importance to it; and the British West India islands rose in proportion as the restrictions on commerce diminished. But the free states of North America advanced with giant strides; their number has increased from thirteen to twenty-four, and their flag waves over every sea. The West India colonies, however, were unfavourably affected by the extension of the cultivation of pro-

ductions previously peculiar to them. The slave-trade was also abolished (1806).

France acquired colonies later than the Dutch and English. Her colonies, and what, at first was thought indispensable for them, commercial companies, were the work of Colbert. He purchased, on several West India islands, as Martinique, Guadaloupe, St Lucia, Grenada, and others, settlements already formed by private persons (1664), and, in the same year, sent colonists to Cayenne. But the settlements on a part of St Domingo by the piratical state of the Buccaneers became the most important. The West India company, erected likewise in 1664, survived only ten years. Sugar and cotton, and, since 1728, coffee (first introduced into Martinique), have been the most important productions of the West Indian colonies, which, by the great commercial privileges granted them in 1717, and by the smuggling trade with Spanish America, soon obtained the ascendency over the English. Though France, by the terms of the peace of Paris (1763), lost some of its smaller islands, it was indemnified by the riches of St Domingo, which furnished, in the years preceeding the revolution, an annual gross revenue of 170,000,000 livres—almost as much as all the rest of the West Indies together. In 1791 and the succeeding years, St Domingo suffered terribly, but it has risen again under an entirely new form. (See *Hayti.*) In 1661, France possessed Canada, Acadia or Nova Scotia, on the continent, and the island of Newfoundland. These colonies, however, made but slow progress. The last was ceded to Britain by the treaty of Utrecht (1713); the two first, with Cape Breton, in 1763. Louisiana, declining in prosperity, was given up to Spain (1764), and Cayenne could ill atone for these losses. Louisiana was afterwards restored to France, but sold by her, in 1803, to the United States of North America. The French did not meet with much better success in their attempts to establish themselves in the East Indies. In 1664, Colbert founded an East India company. After fruitless attempts to form a colony in Madagascar, Pondicherry was founded on the coast of Coromandel in 1670, and soon became the chief seat of the French East Indies. But the company fell into decay. In 1719, it was united with the Mississippi company, but still remained feeble. On the other hand, the French took possession of Isle de France and Bourbon, in 1720, which had been abandoned by the Dutch, and which attained a flourishing condition under the administration of Labourdonnaye (commencing in 1736), by the cultivation of coffee, whilst Dupleix, as governor-general of Pondicherry, had the direction of affairs in the East Indies. Here the arms of the French had been successful since 1751; but the peace of 1763 deprived them of their conquests, and the East India company was dissolved in 1769. The French now possess only Karical and the demolished town of Pondicherry. By the possession of the island of Bourbon alone they have maintained a doubtful influence upon the commerce of the East Indies.

The Danes and Swedes have likewise had colonies; and there was a time when even Austria endeavoured to partake in the colonial commerce. An East India company was formed in Denmark, in 1618, in the reign of Christian IV., which acquired Tranquebar from the rajah of Tanjore, but was dissolved in 1634. The second company, formed in 1670, which survived till 1729, was not more fortunate. In 1671, the Danes also occupied the West India island of St Thomas, to which were added, in the first half of the 18th century, St John and Santa Cruz, which they purchased from France. In 1734, a West India company was established; but, on its dissolution (1764), the commerce with the West Indies was made free to every one, and the islands there improved rapidly. The East India commerce, for which a company had been instituted in 1732, was also very lucrative. But the company traded chiefly with China, and ceded their settlements in the East Indies to the crown in 1777.—Sweden, though it had no possessions in India, established an East India company, in 1731, in order to engage directly in the tea trade with China, which it carried on with much success. In 1784, by the acquisition of the small island of St Bartholomew from France, it gained a firm footing in the West Indies.—Austria was less successful. Under the reign of Charles VI., she attempted to engage in the direct commerce with the East Indies by establishing the company of Ostend (1722), but was obliged, by the violent opposition of Britain and Holland, to dissolve the company in 1731. An attempted settlement, in the last quarter of the 18th century, on the Nicobar islands, in the Indian ocean, which were occupied, in earlier times, by the Danes, but abandoned on account of the unhealthiness of the situation, was equally unsuccessful.

A company was first established in Russia, in 1787, for obtaining furs on the Kurile isles, the Aleutian isles, and the north-west coast of North America. An ukase, in favour of this company, forbidding other nations to trade and fish on the coasts of Asia and North America, from 51° North lat. on the American side, and the South cape of the island of Urup on the Asiatic, together with the intermediate islands, met with opposition from the United States; but, by a treaty concluded at St Petersburg, April 17, 1824, it was agreed that the people of both governments should be allowed to trade or fish unmolested in any part of the Pacific ocean or its coasts. It was also agreed that no establishment should be formed on the north-west coast to the north of 54° by citizens of the United States, nor to the south of the same point by Russian subjects.

While the slave-trade was unobstructed, Africa was of much importance in respect to the colonial interests of Europe. The African establishments are mostly single fortified factories along the coasts of Africa. Their chief object was the slave-trade, which was chiefly carried on by privileged companies. A free negro colony was founded at Sierra Leone, by the British (1786), and the abolition of the slave-trade (q. v.), which originated with Denmark and Britain (1802 and 1806), must necessarily affect the African settlements.—The discovery of Australasia led, in 1788, to the settlement at Sydney cove, in New South Wales, and those in Van Diemen's land (q. v.), which soon became flourishing colonies. See *New South Wales.*

The commerce of the world (see *Commerce*) received a powerful impulse from the colonies, and the nations soon perceived that these constituted one of the chief sources of their wealth. It is, however, not to be denied, that the illusions of the *mercantile system,* so called, and, still more, the great wealth which some colonial powers acquired, and which was attributed exclusively to their colonial trade, caused an exaggerated value to be affixed to this commerce, without sufficient regard to the particular character and genius of the different nations, their geographical and political situation, and the circumstances of the time. Under the influence of this misapprehension, each state endeavoured to exclude all strangers from participating in it; and a law of nations was formed, with regard to the colonies, which was distinguished from the common European law of nations by its ungenerous principles. Thus the Portuguese and Spaniards endeavoured to exclude all other Euro-

pean nations from navigating the seas on which their colonies were situated, and to maintain this assumption by force. But neither Spain nor Portugal was able to maintain, for a long time, their exaggerated pretensions, against which England and Holland declared themselves very early. No sooner, however, had the two last come into possession of the colonial trade, than they announced, if not the same, yet not much nobler principles. Though it was acknowledged, in general, that the Indian seas were not the exclusive property of any power, yet the new proprietors endeavoured to secure the exclusive dominion of some large branches of the sea, not only by treaties, but also by acts of violence and oppression, even in the midst of peace. The principle was adopted, in general, that each European nation should be excluded from commerce with the colonies of every other, and not unfrequently foreigners were forbidden even to land. Great Britain first declared the colonial trade free, in 1822, and the Netherlands seem inclined to follow this example. The colonial trade is divided into three principal classes; the mutual trade between the different countries of those distant regions; the mutual commerce between Europe and the colonies, and the trade in colonial articles in Europe. The mutual trade between those regions where the colonies are situated, which, in the East Indies, before the arrival of the Portuguese, was almost exclusively in the hands of the Arabians or Moors, the Europeans early sought to appropriate; yet they did not succeed in making themselves so entirely masters of it, as to exclude other nations, in later times, chiefly the Chinese and Hindoos, from taking a considerable share in it. As little did the trade in colonial articles in Europe remain the exclusive property of one nation, though the nation which had brought the goods from the countries where they were produced, had many advantages over others, which were obliged to purchase from it. With the exception of the Spaniards and the Portuguese, who have mostly sold in their own ports the productions which they had brought from their colonies, the nations of Europe have endeavoured to be themselves the exclusive carriers of the productions of their colonies to the different ports of the European continent. But it was chiefly the intermediate trade between Europe and the colonies, which every nation reserved to itself, to the exclusion of all foreigners. This was the universal practice, even in time of peace, and was retained also in time of war, as long as no European power was master of the sea; that is, till the middle of the last century. At that time, the British navy attained such a decided superiority, that, during the wars between Britain and France, the latter dared not continue the commerce with its colonies. The French, therefore, adopted a policy, usually practised by them, and the other less powerful colonial powers, in their future wars with Britain, viz: to declare the trade of the colonies free to all friendly and neutral vessels. By this means, they secured not only their colonies, which could not well do without their supplies, but saved at least a part of the profits of the colonial trade; for the neutrals were mere agents in the commerce between the mother country and the colonies, and the former lost only the freight of the merchandise transported. This commerce being interrupted by Britain, which has always refused to acknowledge the principle "free ships made free goods," the neutrals began to purchase the goods of the colonies, with which they were allowed to trade, and to carry them off as their own property. The British, on the other hand, maintained that this was, in most cases, only a fictitious sale, and that the neutrals were, in one case as well as in the other only the carriers for the belligerents. This was, no doubt, the fact in most cases, when, for instance, great purchases were made for places and countries where there could be no market for such a quantity of colonial articles; or when some commercial houses, entirely unknown before, suddenly had immense dealings in colonial articles, which they could not possibly pay for. As Britain maintained, besides, that every precaution which could be taken against this fraudulent trade was made ineffectual by the artifices of the neutrals, she laid down a principle, which, under the name of the *rule of war of* 1756, has made one of the chief points of contest between her and the neutrals. She asserted that this trade, as it was not allowed to neutrals in times of peace, must be considered as the property of the enemy; must be, like any other thing which he possesses, the subject of contest, and belong to the victor; that the neutrals had not the right to profit by the permission to carry on this trade, which they had obtained from the enemy only through his necessities, any more than they would be entitled to take under their protection any establishment of the enemy which was critically situated. The neutrals, she said, had less reason to complain of being injured, as the commerce with the colonies of the enemy was not permitted in times of peace. Among the neutrals, the United States, in particular, have remonstrated vehemently against the rule of war of 1756; while Britain, on the other hand, complained not less bitterly of injuries received from the North Americans. It was not enough that the colonies should be cut off from all intercourse with foreigners; commercial jealousy and the mercantile system have given rise to a number of other restrictions, very disadvantageous to their prosperity, and by which their trade with the mother countries has been greatly limited. The policy of the mother countries was, to keep the colonies in the greatest commercial, as well as political dependence. The chief measure taken for this purpose was, the establishment of companies, to which the trade between the mother countries and the colonies was committed exclusively. The government of these companies was politically as oppressive for the colonies as their exclusive right to the colonial commerce was burdensome to their trade. The productions of the mother country, which they sent to the colonies, were usually of inferior quality, and charged at very high prices, in consequence of which the colonies themselves purchased less. For the mother country, the companies fixed arbitrary prices on the colonial articles; but the companies themselves, in general, gained nothing. Their officers were the only party benefited, as unavoidable frauds of every kind ruined the companies sooner or later. Though our own East India company may seem to form an exception, yet it is well known, that, more than once, it has been saved from immediate ruin only by extraordinary circumstances and support. Such companies have been represented as necessary for carrying on commerce to advantage in foreign countries particularly in the East Indies. The general ignorance of the customs and manners of those parts, the disadvantages of too great a competition, and, finally, the dangers attending intercourse with princes and nations of predatory habits, have been brought forward as arguments to prove that such a trade cannot be carried on by individuals. It was not considered that ignorance of habits and customs, and the dangers of interfering with each other's market, exist in other branches of commerce, which nobody ever thought of managing by companies; and that the hostility of the princes and tribes in such countries is generally excited by the companies themselves; as the servant of a powerful corporation behaves, in

general, with more violence and haughtiness than the single, defenceless merchant, who cannot count on the protection of an armed power. That companies are not necessary for carrying on the colonial trade is proved by the example of the Spaniards and Portuguese, who knew of no such institutions in their flourishing periods. Instead of considering the companies as the cause of the flourishing state of the East India trade, we ought rather to be astonished that, notwithstanding the companies, this commerce has prospered so much. The rapid success of the Dutch East India company, in particular, was a spur to similar institutions, which were not attended with equal success. Besides the companies, there were other restrictions on the colonial trade. Every subject, for instance, was forbidden to sail for the colonies in the service of a foreign power, or without the permission of a company, which possessed the monopoly of their trade. The trade was also usually confined to a few ports, to a certain number of vessels, and to certain times. More liberal principles have been adopted only in recent times. The exclusive privileges have been limited, and the unprivileged, as, for instance, in this country, permitted to partake in the colonial trade. In general, greater freedom has been allowed to this trade. In the government of the colonies, the same principle of keeping them in a state of dependence was maintained. Their trade and government were always in the closest connexion, though in different degrees in different colonies.

Colonies, in general, may be divided, according to their nature, into four large classes, viz., agricultural, mining, planting, and commercial colonies. In the first, to which belong chiefly the colonies in North America, agriculture is the chief object. The Europeans who settled there became landed proprietors, and seldom returned to their native country. In the second and third generation, the more the ties of affinity and other connexions with the mother country disappear, and the recollections of it vanish, the colonists form more and more a distinct nation, and become more and more estranged from their native country. Hence, as experience has shown, the possession of such colonies is insecure as soon as the population increases, and the inhabitants come more into contact with each other. The mining colonies, the chief object of which is the acquisition of precious stones and metals, are nearly in the same condition; as, for instance, the settlements of the Spaniards and Portuguese in South America. They are, from their nature, easily converted into agricultural colonies, and may form, though more slowly, distinct, independent nations; as is the case with the settlements in South America already referred to. (See *South American Revolution.*) It is entirely different with the planting colonies, the object of which is the production of certain plants which generally grow only in a hot climate, as, for instance, the settlements in the West India islands. Here a nation is not easily formed. Europeans are the proprietors of the plantations; but their number is small; besides, they seldom become domesticated there, but, on account of the unhealthy climate, and the inconveniences attending the manner of living there, either administer their plantations by a steward, spending their revenues abroad, or remain in the colonies only until they have collected a fortune, when they return to their native country. The small number of planters (for the far greater part of the population consists of negro slaves, who are used exclusively for the cultivation of the plantations) is the cause that establishments of this kind are least able to dispense with the protection and support of the mother country. Similarly situated are the commercial colonies, which are intended to dispose of the natural or artificial productions of the country. They grow up from single factories and commercial stations, which, by fraud and force, successively make themselves the centres of considerable territories. The possession of landed property in them is only a means for the promotion of commerce. The Europeans, in colonies of this kind, are the rulers, but seldom landed proprietors; they are mostly soldiers, officers, and merchants. For this reason, a nation is not easily formed in them, as the Europeans residing there merely wish to make a fortune and return to their native country. On account of the entire separation of the military forces in the three principal governments of British India, the influence of the civil residents over the troops stationed in the states of the allies of the East India company, the mixture of the royal troops with those of the company, the great influence of the royal forces in Ceylon, and the frequent changes of the garrisons, a military revolution is not much to be feared in British India. The hardest fate which the inhabitants of commercial colonies can suffer, is to fall into the hands of commercial companies which form, at the same time, sovereign political bodies. The abuses and mismanagements of the companies have obliged the governments of the mother countries to bring them more or less under their own immediate superintendence, and to limit them chiefly to trade. The governments of agricultural, mining, and planting colonies are usually of a different character. In them, it is not merely conquered tribes which are to be ruled, but principally Europeans themselves, who have settled in them, former inhabitants of the mother country, and therefore to be treated with far greater delicacy. The government of the mother country has usually taken care of the administration of these colonies itself; and, where they have been managed by companies, the colonies have had, at least, some part in the government: several of them have enjoyed an almost republican constitution. After the abolition of the slave-trade, a fifth class of colonies was formed on the African coast—colonies for the civilization of freed slaves—approaching most nearly to the nature of agricultural colonies. The most important is at Sierra Leone (q. v.), under British authority. It will become an important military and commercial post, as its connexion with the interior of Africa increases. A similar colony, called *Liberia*, was founded at cape Mesurado, on the coast of Guinea, in 1817, by the people of the United States. (See *Liberia.*) Very recently, a colony of coloured persons has been commenced in Canada. In June, 1829, the authorities of Cincinnati (Ohio) ordered the black and mulatto persons to give security for their good behaviour, or to leave the place. This description of persons in that town amounted to about 2000, many of whom decided to settle in Canada. They purchased 124,000 acres of land; and the colony is said to contain, at the time we are writing, 1100 persons.

COLONIES, Military, of Russia. The Russian military colonies differ much from those of Alexander of Macedon and those of the ancient Romans, and also from the Military Frontiers of the Austrian empire, and the distributed troops of Sweden. Russia has endeavoured, by the settlement of entire regiments in particular districts, under a peculiar military, civil, and police government, to unite the character of crown peasants and paid soldiers, whereby agriculture, population, and civilization may be advanced, and the standing army of the empire increased without burdening the revenue. Count Araktschejeff, who rose by merit from a low rank in the army to that of general of artillery, is the author of this system, and for a time directed its execution. When the emperor Alexander, at the

termination of the wars with Napoleon, desired plans for diminishing the great expense of a standing army, Araktschejeff advised him to quarter the soldiers among the crown peasants, to build military villages on a given plan, to allow to each house a certain number of acres of land, and to devise a code of laws for the government of this institution. The soldier was thus to become a peasant of the crown, and the crown peasant a soldier, and both were to be made to contribute to their own support by the cultivation of the soil, and the whole male population of the colonies was to be drilled in the military exercises, and be kept as a reserve for field-duty. On account of the vast extent of the empire, the recruits hitherto levied had often been totally separated from their homes; they joined their regiments, and, after twenty-five years of service on the frontiers of Turkey, Persia, Poland, Norway, and China, forgot that they had families and a country. It was therefore considered desirable that the whole military force of the Russians along the boundaries of Poland, Turkey, and the vicinity of Caucasus, should be collected into military colonies, by which not only the population and cultivation of the country should be promoted, and the families of the soldiers in actual service be provided for, but also the soldiers themselves in times of peace, and in the midst of their wives and children, and around their own firesides, should acquire an attachment to their country. Such colonies were first established in the government of Novogorod; the soldiers were placed in certain villages, which were the property of the crown; the peasants were gradually brought under military government, obliged to wear their hair short, and to shave their beards, and were also drilled in military exercises, so that, in case of the death, absence on service, or sickness of the quartered soldier, the peasant could immediately take his place. Some disorders, the consequence of this project, were soon suppressed, and the whole system gradually developed. According to this system, the name, age, property, and family of each inhabitant of the selected villages are specified; the older peasants are declared the chief colonists, and houses built for them, in regular rows constituting streets. Each chief colonist is equipped in uniform, trained to military exercises, and receives a house with fifteen *desatines* of land, on condition of maintaining one soldier and his horse, if cavalry is colonized). The soldier quartered on him is called the *agricultural soldier*, and assists him in the tillage of the fields and in domestic labours. He also selects one of his family as an assistant, commonly the eldest son, who, after the death of his father, with the approbation of the colonel of the regiment, inherits his real estate. The second son, or some other relation, comes into the "reserve," and also dwells in the house; the third is also made an agricultural soldier; the others are cantonists, &c. A family is divided into three classes. The boys, until they are eight years of age, are allowed to remain with their parents; they are then sent to the military schools, where they are habituated to strict discipline: at the age of thirteen years, they become cantonists, and at the same time are educated as peasants and soldiers, and at seventeen years, they form a part of the military colony, which is governed by a peculiar code. Each colony has its own court of justice, at which the highest officer presides, and the rest follow according to rank. No girl is permitted to marry any one but a soldier. No person is allowed to enter the military district without a special pass from the military authority. The duties connected with the post-houses are also committed to the care of the soldiers. After twenty or twenty-five years' service, the agricultural soldier may renounce his double duty as a soldier and a farmer, or declare himself an invalid. His place is then filled by one of the reserve. Thus had Russia, in 1824, already established a kind of military caste, and, as it were, a military zone, which extends from the Baltic to the Black sea, along the western frontier of the empire, in the governments of Novogorod, Cherson, Charkow, and Ekaterinoslaw, and constitutes the proper country of her standing army. In this belt of land, all the male children are born soldiers; in their seventeenth year, they are placed under the standards, constantly drilled in military exercises, and remain soldiers till they are sixty years of age. As soldiers, they cease to be boors. They are divided into regiments, companies, &c., for whose support a part of the crown-lands is set apart. From the produce of the land granted them, the soldiers of the colony must support themselves and their horses, while not in active service; then they receive pay. It is calculated, that the number of these agricultural soldiers, when the system is fully carried into execution, will amount to 3,000,000, half of whom can be drafted for service. The colonies already established, in 1824, contained about 400,000 male inhabitants, including 40,000 cavalry. In July of the same year, the emperor visited in person many of the colonies, and publicly expressed his satisfaction with their condition. As this system is extended, the conscription and recruiting hitherto practised must gradually fall into disuse. The empire, on its only assailable side, is thus in a continual state of defence; this living rampart also compensates for the want of fortresses, of which there are none of much importance in Russia. General count Araktschejeff was, till the death of Alexander, the commander-in-chief of all the military colonies of the empire. In January, 1824, all the military cantonists of the military orphan schools (in which reading, writing, and arithmetic are taught on the Lancasterian plan, and the soldiers' catechism explained), were made subordinate to the commander-in-chief of the military colonies. Of the cantonists, a considerable number yearly enter the military service, in the place of those of the reserves, who have been drafted to supply the numbers of the agricultural soldiers. The boys then succeed to the places vacated by these cantonists, and so on. A military education is the peculiar support of this system, which subjects the peasant to a military police. For the education and support of the boys and cantonists, the revenue obtained from the release of recruits is applied. By the ukase of December 29, 1823, the possessors of landed property in the thinly settled governments were released from the duty of levying recruits, by the payment of a certain sum of money; 3500 of these releases, at 2000 roubles paper money each, were issued, which produce an income to the state of 7,000,000 of roubles. The expenditures for the military colonies amounted, according to the report of the commander-in-chief, in the year 1822, to 4,962,475 roubles, and the total expenditure since their organization, to 1824, amounted in all to 15,780,115 roubles. Of the 6,000,000 of crown peasants, 4,000,000 are sufficient to furnish quarters to the whole army. Thus Russia, together with her present army of 8—900,000 men (according to the rolls, though not in actual service), would have one equally strong in her colonists, which can be recruited from the cantonists and the body of reserve, without interruption, and in the best manner. A very despotic authority will, however, be requisite to preserve a body of 2,000,000 of soldiers, who have houses and families, under military discipline and restrictions. This system, since the death of the emperor Alexander, has been extended no farther, but, as far as it was already in existence, has been retain-

ed, and was for a time under the direction of general Diebitsch. Mr Lyall, in 1822, visited the Russian military colonies, and gave an account of them in his Travels through Russia (London, 1824).

COLONIES, Pauper. The public attention has, of late, been directed to some novel and very interesting establishments in Holland, which have acquired the name of *pauper colonies*. The object of these institutions is to remove those persons who are a burden to society to the poorest waste lands, where, under judicious regulations, they may be enabled to provide for their own subsistence. The best account that we have seen of these establishments has been published by Mr Jacob, the reporter on the corn trade. As the subject is so interesting and novel, a detailed account, we hope, will be agreeable. Of the pauper colonies, the one which Mr Jacob selects for illustration is that of Frederics Oord. The originator of this scheme was general Van den Bosch. The general, while in the island of Java, had formed a connexion with a Chinese mandarin, whose skill in farming he had admired, and who had under him a colony of emigrant Chinese. On his return to Europe, he laid before the king of the Netherlands a plan for a pauper establishment, which met with the royal patronage. A public meeting was held at the Hague in 1818, and a "society of beneficence" formed, and two committees organized for its management. The president was prince Frederic, the second son of the king. Having received the sanction of the king, the society was recommended to all the local authorities, and soon found itself in possession of £5,625, obtained from more than 20,000 members. With these funds the society purchased an estate on the east side of the Zuyder Zee, and not far from the town of Steenwyk. This estate cost them £4,882, and contained from 1200 to 1300 acres, about 200 of which was under a sort of culture, or covered with bad wood, and the rest a mere heath. They let the cultivated land, about one-tenth of the whole; deepened the Aa (which runs through the estate), so that it is navigable for boats, and built store-houses, a school, and dwellings for about fifty-two families, of from six to eight persons each. Their operations were begun in September, 1818; by the 10th of November the houses were ready; and the communes sent some poor families. The total expense of each family was £150, and this included the building of each house; the furniture and implements; the clothing; two cows, or one cow and ten sheep; cultivation and seed, first year; advances in provisions; advances of other kinds; flax and wool to be spun, and seven acres uncultivated land. This sum allowed about £25 for each individual, and they are expected to repay it to the society in rent and labour, besides maintaining themselves, in about sixteen years. Each allotment of seven acres is laid out in a rectangle, having the house with one end toward the road, and the other reaching fifty feet into the allotment. The dwelling occupies the part next the road; then comes the barn, after that the stalls for the cattle, and behind these the reservoir for manure, in which every particle of vegetable and animal refuse is carefully made up into compost, with the heath and moss of the land; the preparation of this compost being one of the most essential of their labours.

The colonists are subjected to a kind of military regulation, all their work being done by the piece. They assemble at six in the morning, in summer and winter, and those who do not answer to their names at the roll-call get no wages for the day. When the labour of the day is over, each receives a ticket stating the amount of wages; and for that he may procure food from the store at fixed rates. Those who are at first unable to support themselves obtain credit for a short period. The women spin, weave, and knit, at first from purchased wool and flax, but as soon as possible from the produce of their own flocks and fields. A day and a half's work every week is allowed for the support of the sick, the infirm, and those who are not fit for labour; and for this, those who work are allowed one shilling per day in summer, and eight pence in the winter. The whole of the necessaries and appointments are regularly inspected with military care, and such as have been wasteful are obliged to make good what they have destroyed. It will be borne in mind, that the whole stock out of which each family of six or eight persons is to find support, and, if they can, effect some savings, is the stock of £150, and the seven acres of waste land, which is of a description not the most susceptible of cultivation. The careful preparation of manure, the most remarkable feature in Chinese husbandry, is the grand resource; and the result is most encouraging, as an example of how much regularity and perseverance may effect with small means.

As the preparation of manure is still very imperfectly understood, and as many families throw away what constitutes, with these colonies, the elements of prosperity, we give some details from Mr Jacob's book, the utility of which must compensate for their homeliness. When the house and barn are built, the soil formed, by mixing sand and clay to a consistence which makes it sufficiently retentive of moisture, the land manured, dug, and one crop sowed or planted on it, then a family, consisting of from six to eight persons, is fixed on at an expense, as before stated, of £150. To enable this household to subsist, to pay the rent, and to save something, it is necessary that very assiduous manuring be persevered in. The directors therefore require, and, by their enforcement of the prescribed regulations, indeed, compel each family to provide sufficient manure to dress the whole of the land every year. For this purpose, each household must provide itself with 150 tons of manure yearly, or at the rate of more than 20 tons to each acre. When it is considered that few of the best English farmers can apply one-half that quantity of manure, it will not appear wonderful that seven acres should be made to provide for the sustenance of the same number of persons and leave a surplus to pay rent and to form a reserve of savings. On each farm, the live stock of two cows, or one cow and ten sheep, to which may be added pigs, would not nearly enable the cultivator to manure his small portion of land once even in four or five years. It hence becomes necessary to form masses of compost, the collecting the materials for which forms the greater part of the employment of the colonists. These masses are created almost wholly by manual labour, of that kind which, but for such an application of it, would be wholly lost to the community. As straw is, at best, in the early period, not abundant, and as that from the corn must, at first, be chiefly used as food for the cattle or for covering to the houses, other materials, which the heaths furnish, are resorted to in order to make beds for the cattle. The heath land is pared, but the operation is to cut with the spade a very thin slice of the earth, and not to the bottom of the roots of the plants, that they may, as they soon will do, shoot again; the parings are not only made thin, but in narrow strips or small spots. Thus but little soil is taken away, and the roots, though cut, are not all of them destroyed; the parts that are left bare are protected from being too much dried up by the sun and wind, and the seeds of the ripe heather are scattered over the spaces left bare near them, and soon bring forth the same plants. By

this operation, there is a constant succession provided of heathy material. This paring for the heath is a joint operation performed by the men in a kind of military lines. The society pays each for the work he performs, and, when the average cost is ascertained, the sods are sold to the several households at the same price, and are carried to their respective farms in small one-horse carts, which are kept by the society for that and for similar purposes, to which mere manual labour cannot be so beneficially applied. When these sods are dried and conveyed to the barns of the colonists, they are piled in a kind of stack, and portions of it are pulled out, not cut out, to ensure their being broken into small fragments. With these the bedding of the cows or sheep, as the case may be, is formed. The use of bog-turf or peat, as one of the materials of compost, is not approved. It impedes the process of fermentation, which is the most important part of the preparation of the heaps of manure. Another expedient is therefore adopted, by paring the second year's grass land, whether of clover, ray grass, or fiorn. These clods, containing a proportion of the roots of the plants which have been before harvested from them, and much garden mould, become useful auxiliaries to the heathy turf, and spare the use of that material, which, if solely applied, would require almost as much land to supply it as the farm itself. Fresh material is added to the bedding of the cattle every morning and evening, and remains under them seven days, when the whole is wheeled to the dunghill. Each morning, that which lies near the hinder part of the cow is thrown outward, and the part towards its head takes its place, and fresh heather, about a quarter of a fodder, or 250 pounds, added to the bedding; the same is also done every evening. The sheep and pigs are only supplied with fresh heather once a-day. It is reckoned that ten sheep make an equal quantity of dung with one cow. It must be obvious to every one, that the changing and consequent turning over thirteen times must make the mixture of the animal and vegetable substances more equably rich; and the uniform treading of it must break it into small particles, and give greater scope to the fermentative putrefaction. Each week, the stalls are cleaned, and the dung conveyed to the place appointed at the back of the barn. This is of a round shape, from three to four feet in depth. The bottom and sides are walled with either clinkers or turf, and made water-tight. It is commonly from twelve to fourteen feet in diameter, and sufficiently capacious to contain the dung made by the cattle in the course of four weeks. The mass is thus composed of portions which have remained from four weeks to one day, over which the ashes from the household and all the sweepings of the premises are strewed. Adjoining to the dung-heap is the reservoir, into which the drainings of the stalls are conveyed. Equal care is taken that every other material for compost is preserved. In Scotland, little attention is paid to these matters; and even in agricultural districts, many of the most valuable ingredients for fertilizing the earth (soap-suds, for instance) are constantly thrown away. This sesspool, containing about a hogshead is never allowed to run over, and, if it has not rained, is every other day filled up with water, and then, with a scoop, taken up, and sprinkled over the heap of dung. This heap contains four weeks' dung, or thirty fodder, or fifteen tons; and the administering fourteen such portions of rich fermenting matter must vastly enhance the value of the whole for the purposes of vegetation. At the end of the fourth week, the dung-hole (called, locally, the *gierback*) is emptied, and its contents thus again turned over the most putrid parts being, by this means, brought up to the top: it is formed into a heap from three to five feet high, and carefully covered with sods: by this covering the fermentative heat is prevented from evaporating, and the rain-water is kept from the mass, into which, if it penetrated it would check fermentation. When the heap has lain and fermented during one, two, or three months, it is carried to the field which is to be manured with it. The covering of sods is separated from the heap, and carried to the dung-hole, where it is laid at the bottom of the next monthly accumulation, and imbibes with it an equal proportion of vegetative power.

The following are the sums of produce and expenditure for each family for one year:—

Total produce, ...	£50
Expenses, including rent, ...	42
Surplus each year, ...	£8

The desire of gain, and the approbation of the superintendents, are, in general, found to be sufficient encouragements both to industry and good conduct. When these are not enough, forfeiture of privileges, confinement and hard labour are resorted to. There are also badges of honour, medals of copper, silver, and gold. Those who have the copper medal may leave the colony on Sundays without asking leave; the silver is given to those who have made some savings, and they are allowed to go beyond the colony in the intervals of labour on working days; and when they are entitled to the gold medal, by having shown that they clear £22 a-year by their labour, they are free-tenants, and released from all the regulations of the colony. These privileges may, however, be suspended for offences. In the course of seven years from its first establishment, the colony of Frederics Oord contained a population of 6778, including that of Omne Schanze, which is under a more rigid control. Among the number were 2174 orphans and foundlings. The total number forming all the colonies in Holland was stated to Mr Jacob as 20,000, but he thinks it exaggerated; there were, however, 8000 in North Holland. Every attention is paid to the education of the young.

COLOSSUS (Lat.; κολοσσός, Gr.), in sculpture; a statue of enormous magnitude, whence the Greek proverb κολοσσαῖον το μίγαλος. The practice of executing statutes of colossal dimensions and proportions is of very high antiquity. The people of the East, from the most ancient times, have been celebrated for colossal sculpture. The pagodas of China and of India, and the excavated caverns of the East, abound with *colossi* of every denomination. The Asiatics, the Egyptians, and, in particular, the Greeks, have excelled in these works. The celebrated colossus of Rhodes was reckoned one of the seven wonders of the world. This statue, which Muratori reckons among the fables of antiquity, was raised, by the Rhodians, in honour of Apollo. There are many contradictory accounts in ancient authors concerning this colossal statue of Apollo; but the following gathered from several sources, is not devoid of interest, though mixed up with much fable. When Demetrius, king of Macedon, the son of Antigonus, laid siege to the city of Rhodes, because the Rhodians would not renounce their alliance with Ptolemy Soter, they were succoured by their allies, and particularly by Ptolemy, so effectually, that the besiegers were compelled to abandon their enterprise. The Rhodians, in recognition of their regard for these services of their allies, and of the protection of their tutelary deity, Apollo, resolved to erect a brazen statue of the sun, of a prodigious size. Chares, the disciple of Lysippus, was intrusted with the project. He had scarcely half finished the work, when he found that he had expended al'

the money he had received for the whole, which overwhelmed him so completely with grief and despair, that he hanged himself. Lacnes, his fellow-countryman, finished the work in the space of three Olympiads (twelve years), and placed the enormous statue on its pedestal. Pliny does not mention the latter artist, but gives all the honour to Chares. Scarcely sixty years had elapsed before this monster of art was thrown from its place by an earthquake, which broke it off at the knees; and so it remained till the conquest of Rhodes by the Saracens, in A. D. 684, when it was beaten to pieces, and sold to a Jew merchant, who loaded above 900 camels with its spoils. Strabo, Pliny, and other ancient authors, who lived at the time that the colossus of Rhodes is said to have been in existence, and who could have learned from contemporaries the truth or falsehood of the accounts of it, give its height at seventy cubits, or a hundred English feet. Other authors, who flourished since its destruction, report its height at eighty cubits. Pliny also relates other particulars, as that few persons could embrace its thumb, and that its fingers were as long as ordinary statues, which, calculated by the proportion of a well made man, would make its height nearer to eighty than seventy cubits. Perhaps the latter dimension may relate to its real altitude to the crown of its head, and the greater to its altitude if erect. But we are not aware that any writer has given this reason for the ancient difference. The statue was placed across the entrance of the harbour, with its feet on two rocks; and the Rhodian vessels could pass under its legs. Some antiquaries have thought with great justice, that the fine head of the sun, which is stamped upon the Rhodian medals, is a representation of that of the colossus. Of other colossal statues, those which were executed by Phidias are among the most celebrated for beauty and elegance of workmanship. They were his Olympian Jupiter and his Minerva of the Parthenon. The virgin goddess was represented in a noble attitude, twenty-six cubits or thirty-nine feet in height, erect, clothed in a tunic reaching to the feet. In her hand she brandished a spear, and at her feet lay her buckler and a dragon of admirable execution, supposed to represent Erichthonius. On the middle of her helmet a sphynx was carved, and on each of its sides a griffin. On the ægis were displayed a Medusa's head and a figure of victory. This colossal work was not only grand and striking in itself, but contained, on its various parts, curious specimens of minute sculpture in *bassi rilievi*, which Phidias is said to have brought to perfection. His Olympian Jupiter was executed after the ungrateful treatment he received from the Athenians, when he abandoned the city of his birth, which he had rendered celebrated by his works, and took refuge in Elis. Animated rather than subdued by the ingratitude of his countrymen, Phidias laboured to surpass the greatest works with which he had adorned Athens. With this view he framed the statue of Jupiter Olympius for the Eleans, and succeeded even in excelling his own Minerva in the Parthenon. This colossal statue was sixty feet in height, and completely embodied the sublime picture which Homer has given of the mythological monarch of the heavens. While describing the *colossi* of ancient times, we should not forget the magnificent and extravagant proposal of Dinocrates to Alexander the Great, of forming mount Athos into a colossus of that conqueror; nor a similar proposal, in modern times, of sculpturing one of the Alps, near the pass of the Simplon, into a resemblance of Napoleon. Among other celebrated *colossi* of ancient times, historians record as eminently beautiful, that which was executed by Lysippus at Tarentum. It was 40 cubits or 60 feet in height. The difficulty of carrying it away, more than moderation in the conqueror, alone prevented Fabius from removing it to Rome, with the statue of Hercules, belonging to the same city.

Colossi were in use also in Italy before the time when the Romans despoiled their vanquished enemies of their works of art. The Jupiter of Leontium in Sicily was 7 cubits in height, and the Apollo of wood that was transported from Etruria, and placed in the palace of Augustus, at Rome, 50 feet. The same emperor also placed a fine bronze colossus of Apollo in the temple of that god, which he built near his own palace. The earliest colossus recorded to have been sculptured in Rome was the statue of Jupiter Capitolinus, which Spurius Carvilius placed in the capitol after his victory over the Samnites; but *colossi* soon became far from scarce. Five are particularly noticed; namely, two of Apollo, two of Jupiter, and one of the Sun. There has been dug up among the ruins of ancient Rome, a colossal statue of the city of Rome, which was reckoned among the tutelary divinities of the empire. The superb *colossi* on the Monte Cavallo, called by some antiquaries the *Dioscuri*, are magnificent specimens of Grecian art; so are the Farnese Hercules and the gigantic Flora of the Belvedere. It used to be the common opinion, that the *colossi* on Monte Cavallo both represented Alexander taming Bucephalus. They are now generally believed to represent the *Dioscuri*, Castor and Pollux; the statue which, according to the inscription on the pedestal, is the work of Phidias, being intended for Castor; the other of inferior value, and, according to the inscription, the production of Praxiteles, representing Pollux. The original design of these statues is not known; nor does it appear from history what led Praxiteles, after an interval of about 80 years, to execute a counterpart to the work of Phidias, in case the inscription is to be credited. The editors of Winckelmann's works (vi. 2d part, p. 73, and v. p. 560), on account of the elevated character of the first of these statues, think it reasonable to attribute it, as the inscription does, to Phidias; for in the individual parts there is no narrow, laboured care perceptible in the execution, no overwrought polish and elegance. From various inequalities on the statue of the man—for instance, on the chin—they conjecture that this work was not completed by that great master, and hence was not esteemed so highly at first as afterwards, when the era of noble Grecian sculpture had passed away, and when the statue was probably first set up. But, as the primitive design of the work required a counterpart, they conjectured that the sculpture was committed to Praxiteles, the most perfect artist of that period. On this hypothesis, they explain the marks of a later age in the second statue, particularly the great dexterity with which the master has imitated the first, and finished every part without seeming to be a mere copyist. The want of that lofty spirit which distinguishes the earlier statue they ascribe to the constraint of the artist in forming a counterpart to a previous work, and to the circumstance that Praxiteles, belonging to an age which was fond of the gentle and soft, entered the lists with the giant of an earlier period in the arts (Winckelmann's Works, vi. 2d part, p. 155). Canova has attempted to prove, from the nature of the groups, that in both, the hero and horse were so placed that the two could be seen at once; and perhaps it was so originally; but the horse is now exactly opposite to the spectator, and the whole is less agreeably grouped.

Rome possesses several other *colossi*, of admirable workmanship, as the colossal statue of Alexander the Great, in the Colonna palace; the rare colossus of Antoninus, in the Palazzi Vitelleschi; the cele-

brated statue of the Nile; the four statues that surround the splendid fountain and obelisk of the Piazza Navona, the admired work of Bernini. They are personifications of four of the principal rivers in the world; namely, the Ganges, which was sculptured by Fran. Baratta; the Nile, by Antonio Fancelli; the Danube, by Claude Franc; and the Rio de la Plata, by Antonio Raggi. Other colossal statues of less consequence are also found among the beautiful works of art in this city. The pride and ambition of the Roman emperors led them to encourage sculptured representations of their persons. Nero was the first who ventured on a colossus of himself by Zenodorus; but, after his death, it was dedicated to Apollo or the sun. Commodus afterwards took off the head, and replaced it with a portrait of himself. Domitian, actuated by a similar ambition, prepared a colossus of himself as the deity of the sun.

Among more modern works of this nature is the enormous colossus of San Carlo Borromeo, at Arona, in the Milanese territory. It is of bronze, 60 feet in height, and has a staircase, in its interior, for the purpose of occasional repairs and restorations. The bronze colossus, copied from one of the Monte Cavallo statues, in Hyde park, London, and a few but little larger than life, of the size that may be termed *heroic* rather than *colossal*, such as decorate some public buildings and commemorative columns, as those on St Paul's cathedral; lord Hill's column in Shrewsbury; the Britannia, on the Nelson column, at Yarmouth; the duke of Bedford, in Russel square; Charles Fox, in Bloomsbury square, &c., are nearly all that Britain can boast of in this noble style of art. The four colossal statues at Paris, which are in front of the façade of the palace of the *corps législatif*, are in good taste, and show great boldness and freedom in the execution. They represent the four greatest legislators of France—Sully, Colbert, L'Hopital, and D'Aguesseau. They are in their proper costume, and seated. Canova's Perseus is also much larger than life, and a very fine work. It belongs rather to the heroic than the colossal.

COLOUR; a property of light, the knowledge of which can be obtained from no description, but is acquired by means of the organ of sight. To investigate the properties of light, so far as colour is concerned, let us institute the following simple experiment:—Let a beam of light from the sun, be admitted through a hole of the window-shut of a dark chamber. At a little distance behind this hole let there be placed a triangular glass prism in such a way as to receive the beam of light, and transmit it to a white wall opposite the window-shut. This arrangement being made, it will be found that the beam of light, after passing through the hole, remains white, and proceeds in a straight line until it enters the prism, on passing through which, however, it immediately begins to disperse, and will form upon the wall an oblong image of seven different colours; red, orange, yellow, green, blue, indigo, and violet. These colours are precisely the same as those seen in the rainbow (q. v.), and are called prismatic or primary colours. Thus we see that the white light has been decomposed into seven different colours, by means of the glass prism, but if we place a screen, having a hole in it, behind the prism, so as to intercept all the light excepting that of one colour (say indigo), it will be found that a prism placed behind the screen will have no effect in decomposing this light; so that the indigo, in passing through the second prism, will remain unchanged, and the same with all the others, which led Newton to denominate the seven colours above menticned, simple or homogeneous colours. That these seven primary colours, when combined together in proper proportions, constitute white, may be shown by a very simple experiment. Let the seven colours be painted on the face of a circular piece of pasteboard, as near their proper tints as possible, and in the order and proportion exhibited in the diagram p. 331, where the circle being divided into 360 degrees, the following spaces are allowed to the respective colours, bearing the same proportions as in the prismatic spectrum, and rainbow; i. e. violet 80, indigo 40, blue 60, green 60, yellow 48, orange 27, red 45. If this painted circle be made to whirl rapidly round its centre, no single colour will have sufficient time to make a strong impression on the eye before all the others have passed in succession, the rays coming from the several colours being in a manner mingled together, and the impression of the spectator will be that the circle is white. The same thing may be proved by mixing, in due proportion, seven powders of the proper colours, the compound powder being white. Various theories have been advanced to account for the phenomena of colour, which the reader will find discussed under our articles *Light* and *Optics*. A simple and satisfactory theory may be deduced from the facts elicited during the course of a series of experiments conducted about the close of the last century by Lord Brougham. From the experiments above alluded to it is inferred that the particles which compose white light vary in magnitude, the particles of the red being to those of the violet, in the proportion of 1275 to 1253; those two colours being the extremes of the prismatic spectrum. The particles of all the other colours, are less than the red, diminishing as they approach the violet, the particles of which are least. We may now see the cause of the prism separating a beam of white light into seven different colours, since it must have more power in altering the course of the smaller particles than the larger or more dense; and, accordingly, we find the red rays least bent out of their original direction, and the violet most, the intermediate colours being more or less bent from their primary course according as they approach the red or violet. The cause of the differences of colours in bodies may also be easily accounted for on the same principle. The pores of some bodies are of such a nature, that they either reflect all the rays of light which they receive or in the proportions in which they exist in the solar beams, in which case these bodies will appear white; when, on the other hand, they reflect none of the rays they appear black. A remarkable proof of this was given some years ago in the examination of a specimen of crystal of quartz, about $2\frac{1}{2}$ inches in diameter, belonging to the cabinet of the duchess of Gordon. This crystal being broken in two, the faces of the fracture appeared perfectly black, presenting an appearance like black velvet. On examination, this singular phenomenon was found to arise from the smallness of the diameter of the fibres not exceeding one-third of the millionth part of an inch, in consequence of which they were incapable of reflecting the smallest particles of the rays of light. Between white and black, innumerable species of colours may arise from the differences in the magnitude and arrangement of the fibres and pores of the bodies which either reflect or transmit light. The peculiarity of the fibrous arrangement of the surface of mother of pearl, causes it to reflect light of different colours very agreeable to the eye; a circumstance of which art has recently taken advantage in producing similar appearances, by running small grooves very near to each other across the surface of polished glass or metal. That it is not the chemical composition, but the mechanical arrangement of the surface of the mother of pearl which produces these colours, may be proved by a very

simple experiment. Place a small quantity of strong solution of gum Arabic between two plates of mother of pearl, which, when hard, must be separated from the plates; it will then be found to exhibit, either by reflection or refraction, all the fine colours of the real shell. The blue colour of the sky is to be accounted for on the principle that the air reflects the blue part of the rays only, and the diversified appearances of the clouds under different circumstances arise from differences in their density or position. The immense quantity of vapour between a spectator on the earth, and the sun, presents an obstruction to the easy passage of light, so that only the more dense rays can reach the eye, the weaker rays or light of smaller particles being retarded; hence the morning and evening skies present those beautiful assemblages of yellow, orange, and red clouds. So it is in looking along a street at night; the lamps change their colour as they recede from us, becoming more and more inclined to red, according to their distances; and divers have always remarked the red appearance of objects under water.

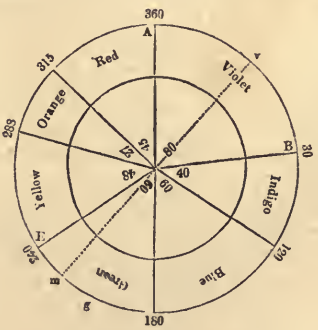
In the morning and evening, when the sun is near the horizon, the rays have to remove a great quantity of dense vapour before they reach the eye; and the less ponderable rays will be obstructed, the more ponderable or red rays being the only ones which reach the spectator; hence the red appearance of the sun in the morning and evening.

Although opticians, in considering the subject of colours, usually regard the seven of the prismatic spectrum as simple and distinct from each other, yet, on a close examination of the image formed by the prism, it will be found that the colours pass into each other by degrees, and that therefore there is a great diversity of hue even in the space usually allotted to one colour. Some hold that there are only three primary colours; red, blue, and yellow, because all the others can be compounded of these. This view of the subject is rendered highly probable, by the fact that the colours, said to be compound, i. e. orange, green, indigo, and violet, are intermediate between the primary, red, yellow, and blue, as exhibited in the prismatic spectrum. The shade and tint of the compound colours may be greatly varied by mixing the simple colours which form them in different proportions. Thus green, which is a compound of blue and yellow, may be made of very various tints, by mixing these colours in different proportions, and still the resulting colour will be called green; but the shade of either yellow or blue can only be altered by adding white; for should any other colour be added to the yellow or blue, the compound can no longer receive the name of yellow or blue. Much practice is necessary to enable us to distinguish slight differences in the shades and tints of colours, and some eyes are totally incapacitated for this, especially where particular colours are concerned. Many instances might be brought forward of this nature; we need only mention Dugald Stewart, Dalton, and Troughton, who could not distinguish certain colours from others. But in all cases where this defect exists, it has been found that the persons are insensible to red light and all the compound colours into which it enters.

A very simple experiment of M. Buffon's has opened a new field in the science of colours, which has been productive of results of great utility in a practical point of view. Buffon having placed a red wafer on a sheet of white paper, and fixed his eye on it steadily for a few seconds, then having looked to another part of the paper, he saw a green spectrum of the same size as the wafer. By using wafers of different colours, differently coloured spectra were produced, as follows:—

Colour of the Wafer.	*Colour of the Spectrum.*
Black,	White.
White,	Black.
Red,	Bluish green.
Orange,	Blue.
Yellow,	Indigo.
Green,	Violet, with a little red.
Blue,	Orange red.
Indigo,	Orange yellow.
Violet,	Bluish green.

These spectra are called accidental or contrasting colours; they are rendered still more distinct, if the wafers be viewed upon a black ground, and the eye transferred from that to a white ground. The accidental colours may all be found in another way. Take the circle alluded to before, having the prismatic colours painted on its surface, in the proportion as marked in the figure below. If this circle be whirled round its centre, it will, as observed above, appear as a white disc. But suppose any one of the colours taken out, or painted black, then will the circle, when whirled round, exhibit another colour, which shall be the accidental of that which has been blackened or omitted. Thus, if the red be left out, the disc, when whirled, will appear green, and by leaving out the other colours in succession their respective accidentals may be shown. The accidental colour of any of the colours in the circle may be easily found. Thus,



If we omit violet, wishing to find its accidental colour, then the remaining arch will be A E B, whose centre of gravity is the point m m, the green arch, but not in the centre of that arch, being somewhat towards the yellow; therefore the contrasting colour of violet will be green, mixed with a little yellow. Hence, by drawing a diameter through the centre of the omitted arch, the other extremity of this diameter will be in the centre of the accidental colour, and so of the rest. The explanation of the phenomena of accidental colours is at once simple and satisfactory. When the eye is directed for some time, to a red spot for instance, the retina becomes strongly excited by the red rays, and its sensibility to weaker impressions of rays of that colour must, therefore, be for a time destroyed; just as the palate, when accustomed to a particular taste, ceases to feel its impression when weak. Now white is a compound of all the colours, and, therefore, when the eye is turned from the red wafer to the white ground, it will necessarily become insensible to the red rays which enter into the combination of the white; the eye, therefore, receives an impression of all the others combined, which, we have seen, must be green, the accidental colour of the red. It deserves to be noticed, that none of the three simple colours, before alluded to, ever appear as the accidental of a compound, but each contrasting colour of a simple one is compounded of the other two; thus, the accidental colour of red, *i. e.* green, is a compound of blue and yellow

Many other curious facts might be noticed connected with accidental colours, but they may be here omitted, as of minor importance; and we proceed to show the practical application of what has already been laid down. Whenever colours are employed, and great distinctness required, as in the dial-plates of watches, or books printed on small type, the colour of the ground should be the accidental of that of the character, as in this case the unavoidable motion of the eye will not be accompanied with images of the accidental colours of the letters floating on the ground, black letters are therefore best upon a white ground; the one being the accidental of the other; but if the book were printed with red ink, indistinctness would follow, since green spectra would necessarily be seen floating on the pages. The same principle ought to be taken advantage of by painters and the drawers of patterns; for there must always be, either in a picture or design, some principal object to which all the others ought to be subservient; the colour of this object must, therefore, in a great measure regulate the tints of the rest of the picture, which ought to partake more or less of the accidental. The contrast of the colours must not, however, be carried to too great a length, otherwise the mellowness of the piece will be destroyed, and the over-distinctness of the colouring will form a gaudy, rather than an agreeable picture. This the judicious artist effects by the introduction of a class of colours called harmonics or harmonizing colours. The harmonizing colour of any original may easily be found, for it is always that next to the original, and between it and the accidental, in the order of the spectrum; hence, yellow will form the harmonizing colour to white, orange to yellow, red to orange, violet to red, blue to violet, &c.

To show the application of what has been said, we may remark, that in a composition of white objects the pure colour will appear on the principal light only, and black will be the contrasting colour, which, however, may be too strong for the nature of the subject, and may, therefore, be diluted into a grey. In order to lead the eye agreeably from the white to its contrasting colour, the harmonizing tint, yellow, will be introduced, which, in proportion to its distance from the principal light, will harmonize into the shade, by gradually losing its brightness, and mingling with the contrasting ground. An isolated spot, particularly if bright, is harsh and disagreeable, and any object introduced must be tempered in position and colour, so as to harmonize with and increase the effect of the principal. Every principal colour in a picture, will have its harmonizing colour next it, and the contrasting one farther from it, the intermediate space being occupied by tints neutralized by these together, the intensity of the harmonizing and contrasting colours diminishing towards each other. The principal masses of light should be occupied of course, by the light colour as nearly as possible in the order of their power of illumination; thus the yellow should follow white, orange yellow, red orange, &c., and these again should be counterbalanced by the deeper colours in the shades arranged according to their office as contrasting colours, so as to produce harmony and consistency in the whole. The sky and back ground will be found powerful auxiliaries in producing harmony in a picture. Thus a grey cloud may be opposed to a white object, and by gradually resolving itself into blue becomes a contrast to the yellow. In deep colours or broken tints, as brown, dull green, blue grey, &c., harmony may be less sparingly used. Thus much we have said on the practice of colouring to illustrate the application of the theory we have endeavoured to lay down, which will be found consistent with the practice of the best masters. Although the laws of harmonious colouring have not as yet been fully treated of in detail by any writer; yet they are founded in the unchangeable laws of nature, and have been floating in the minds of the leading artists of all ages, particularly those of the Venetian school, who have excelled all others in the beauty of their colouring. The silk dresses of France and Britain, exhibit some beautiful illustrations of the application of these principles, which have been known and acted upon by designers of patterns for many years, as may be seen by reference to an excellent article on design, in Murphy's Art of Weaving. The judicious decoration and painting of apartments, as likewise the selection and arrangement of coloured articles of dress, can only be well performed by following the laws of harmonious colouring. (See Hay on Harmonious Colouring adapted to House Painting, Edin. 1828.)

Colours of Plants. We find in Plants eight fundamental colours, which are called *pure* and *unmixed* colours—white, grey, black, blue, green, red, and brown. Each of these exhibits seven varieties, which, in respect to their gradations, are entirely equal and alike. Thus, for example, of white, there are pure or snow-white; whitish or dirty white; milk or bluish white; amianthus or greyish white; ivory or yellowish white; *parzellan* or reddish white; and chalk or brownish white. The blue crocus often changes to yellow; the blue violet to white; the blue columbine to red; the red tulip to a yellow, and the yellow to a white, &c. The same thing may be observed in fruits. Linnæus has inferred the properties, and especially the taste of plants, from their colour. Yellow is generally bitter, red sour, green denotes a rough alkaline taste, paleness a flat taste, whiteness a sweet, and black a disagreeable taste, and also a poisonous, destructive property. Colours, in the vegetable as well as in the animal world, appear to be in truth a secret of nature. How, for instance, bright yellow and deep red or green are made to appear side by side upon a leaf, separated by the finest lines only, and yet not produced by any variety of properties which is perceptible to any of our senses, is a mystery to us. Moreover, nature, in some cases, appears to distribute colours, with the greatest regularity, while, in other instances, she sports in the most lawless irregularity.

COLOURING; one of the essential parts of painting (q. v.), viz. that part which relates to colours. Besides a knowledge of the art of preparing and mixing colours, and the whole mechanical process, from the beginning to the finishing of a picture, which in the various kinds of painting, varies according to the materials of each, colouring comprehends the knowledge of the laws of light and colours, and all the rules deducible from the observation of their effects in nature, for the use of the artist. This subject has been treated by Leonardo da Vinci, in his work on painting; Lomazzo and Gerard Lairesse, in books on the same subject; Mengs in his *Praktischer Unterricht*; Goethe, in his *Farbenlehre*, &c. The skill of the painter presupposes a natural ability, founded on superior sensibility, viz. the ability to image forth, and, in the imitation, to express with characteristic truth, the peculiar substance and colour of any object under the influences of the light and air. To make this imitation successful, an accurate attention to the local tones and tints is requisite. By *local tones* we understand the natural colour of an object as it appears on the spot where it stands, or from the spot where the spectator is supposed to be stationed. In works of art, the natural colour of an object appears always as a local tone, because every object must be

regarded from only one point of view; conformably to which the natural colour is modified according to the supposed distance. By *tints* we understand, in a more restricted sense, the gradations of the clear and obscure, which lights and shadows produce on the coloured surface. (See *Chiaro scuro.*) In no object of art do these modifications and shades exist in greater delicacy and diversity than in the naked human body, which is, consequently, the most difficult subject for a painter. Colouring, in as far as it is an imitation of the colour and character of flesh (the naked body), is called *carnation* (q. v.). If, in addition to the accurate coincidence of the natural colours, local tones and tints of a painting, with its original, the artist hits the expression of the peculiar character of the substance of which the object consists, the colouring is called *true.* But to truth should be joined beauty, which is attained by the harmonious union of all the tones of the painting into one leading tone. The colouring must conform to and promote the object of the painting, as a work of art, and, by the harmony of the colours and lights, as well as by the truth of the local colours, and of the individual parts, of the subject, constitute one beautiful whole. In the choice of lights and the distribution of colours, the artist should aim, not only at clearness of representation, but, at the same time, at the production of a pleasing harmony, which should aid the general impression of the piece. Consequently, *keeping* and *chiaro scuro* are comprehended in the idea of correct, beautiful colouring. We often see pictures, in which the colours are true to nature, but which have little merit as works of art, because they are deficient in that harmonious union of excellences which is essential to a beautiful painting.

COLQUHOUN, Patrick; a metropolitan magistrate, noted as a writer on statistics and criminal jurisprudence. He was born at Dumbarton, in Scotland, in 1745, and, early in life, went to America to engage in commerce. In 1766, he returned home, and settled as a merchant at Glasgow, of which city he became lord provost, and was likewise chairman of the chamber of commerce. Having removed to London, he was made a police magistrate, in 1792; in which situation he distinguished himself by his activity and application; the result of which was, a Treatise on the Police of the Metropolis, published in 1796. This work procured him the honorary degree of LL.D. from the university of Glasgow. In 1800, he published a work on the police of the river Thames, suggesting a plan, afterwards adopted, for the protection of property on the river, and in the adjacent parts of the metropolis. He was also the author of a Treatise on Indigence, exhibiting a general View of the National Resources for Productive Labour; a Treatise on the Population, Wealth, Power, and Resources of the British Empire; and a tract on the education of the labouring classes. Mr Colquhoun died April 25, 1820, aged 75, having resigned his official situation about two years previous to his decease.

COLUMBA, St.; a native of Ireland, founder of the monastery of Icolmkill. About 565, he visited Scotland and was favourably received by the king Bridius, who gave him the isle of Hy, where he established his famous seminary. He died in 597, having acquired great influence.

COLUMBANUS, a missionary and reformer of monastic life, born in 560, in Ireland, became a monk in the Irish monastery of Benchor, went through England to France, in 589, with twelve other monks, to preach Christianity, and founded, in 590, the monasteries of Annegray, Luxeuil and Fountaine, of Burgundy. His rule, which was adopted in latter times by many monasteries in France, commands blind obedience, silence, fasting, prayers, and labour, much more severe than the Benedictine rule, and punishes the smallest offences of the monks with stripes, the number of which proves the barbarism of his times, and his savage character. He retained also the old ecclesiastical customs of the Irish, among which is the celebration of Easter at a different time from the Romish church. Queen Brunehaut banished him on account of his inflexibility of character, 609; upon which he went among the heathen Alemanni, and preached Christianity in the vicinity of Bregentz, on lake Constance. His companion Gal (that is, Gallus, founder of the monastery St Gal) obstructed his success by his violence in destroying the monuments of the heathens, till a war, in 612, put a stop to his labours. Columbanus then went into Lombardy, and founded the monastery of Bobbio, in which he died, Oct. 22, 615. His intrepid, violent and heroic spirit is displayed in his letters to the popes Gregory I., and Boniface IV., in which he refused to celebrate Easter with the Romish church, warned the popes against heresies, and represented, in a strong light, the corruption of the church. His services in reforming the monastic discipline, and the number of his miracles, caused him to be canonized. His writings are few, and of the ascetic kind. His rule was observed the longest in the large, rich monastery of Luxeuil, and was supplanted first, in the ninth century, by the Benedictine. The habit of his monks was white. See *Benedictines.*

COLUMBARIUM (*Lat.*), in ancient architecture, a pigeon-house or dove-cote. *Columbarium fictile;* an earthen pot for birds to breed in. In the cemeteries of the ancient Romans, the apertures that were formed in the wall for the reception of the cinerary urns were also called *columbarii,* from their resemblance to the openings of a pigeon-house.

COLUMBIA; a town in South Carolina, and the seat of the state government; lon. 81° 7′ W.; lat. 33° 57′ N.; population, in 1820, 3000. It is situated opposite to the confluence of the Saluda and Broad rivers, which unite here to form the Congaree. From the river there is a gradual ascent for one mile; then commences a plain of between two and three miles in extent, gradually descending on every side. This elevated plain forms the site of the town, which presents a handsome and extensive prospect. The town was formed in 1787. It is regularly laid out. The streets intersect each other at right angles, and are 100 feet wide. The South Carolina college was founded in this town in 1802, but degrees were not conferred here until 1807. It is under the liberal patronage of the state legislature, from which it has received annually a grant of between two and three thousand pounds. It had, in 1824, a president, four professors, two tutors, and 102 students.

COLOMBIA COLLEGE. See *New York.*

COLUMBIA, District of; a tract of country ten miles square, on both sides of the Potomac, about 120 miles from its mouth, ceded to the United States, by Virginia and Maryland, in 1790. It includes the cities of Washington, Alexandria and Georgetown. Population in 1810, 24,023; slaves, 5395: population in 1820, 32,039. The exports of this district, in 1827, amounted to about £20,000; the shipping, in 1819, to 22,141 tons. This district is under the immediate government of congress, and is remarkable chiefly for containing the city of Washington, which became the seat of the government of the United States, in 1800. The surface is uneven, but there are no high hills, and the soil is thin and sandy.

COLUMBIA RIVER; a large river of North America, which rises, according to Mackenzie, in the Rocky mountains, about lon. 121° W., lat. 54° 23′

N., within a few miles of the source of the Unijah or Peace river, and, after a course of about 1500 miles, flows into the Pacific ocean between point Adams and cape Disappointment, lon. 123° 54′ W., lat 46° 19′ N. The three great tributaries of this river are the Multnomah, Lewis's river and Clark's river, all flowing into it on the S. E. side; the Multnomah 139 miles from its mouth, Lewis's river 413, and Clark's 600 miles. At the point of the junction of Lewis's river, the Columbia is 960 yards wide. The tide flows up 183 miles, to within seven miles of the great rapids. Vessels of 300 tons may reach the Multnomah, and large sloops may ascend as high as the tide. Above the rapids, the navigation is good for sixty-five miles, when it is interrupted by the long narrows; and six miles higher up, that is, 261 miles above the mouth of the river, it is interrupted by falls of twenty feet perpendicular; above the falls, the navigation continues good to the junction of Lewis's river. The portages around these obstructions of the navigation amount, in all, to five miles. The entrance of the Columbia lies between breakers, which extend from cape Disappointment to a point on the southern shore, over a sort of bar or extensive flat. The entrance into the river and the egress out of it are difficult at all seasons, and, from October to April, extremely dangerous; and, in the opinion of experienced navigators, it cannot, at any season, be entered by loaded vessels of 400 tons. The westerly wind prevails on this coast, and the sea breaks on the bar with great violence. The first modern navigator that entered this river was Mr Grey, commander of the ship Columbia, of Boston. He entered it in 1791, and since that time the river has been known by the name of *Columbia*. It was before called the *Oregon* and *River of the West*. The country bordering on the Columbia, towards the ocean, is covered with heavy timber, consisting almost wholly of fir, of which captains Lewis and Clark mention seven species, some growing to a great height. The soil is fertile, composed of a dark rich loam. The length of the valley from north to south has never been ascertained. The climate is much milder than in the same parallel on the Atlantic coast.

COLUMBITE, or TANTALITE, is the name of the mineral in which the metal *columbium* is found. It occurs in single crystals, or in small crystalline masses, disseminated through granite. The form of its crystals is that of a rectangular prism, variously terminated at one or both of its extremities. It is black, opaque, scratches glass, and is possessed of a specific gravity varying from 6.46 to 7. It contains, according to Wollaston, oxide of columbium eighty, oxide of iron fifteen, oxide of manganese five. It sometimes contains, also, the oxides of tungsten and of tin. Columbite was first found in Connecticut, at New London, afterwards in Finland, and more lately at Bodenmais, in Bavaria. It is occasionally met with at Haddam, in Connecticut, and has very recently been discovered at Chesterfield, in Massachusetts. Columbite, notwithstanding its numerous localities, is still an exceedingly rare substance.

COLUMBIUM. This metal was discovered, in 1801, by Mr Hatchett, who detected it in a black mineral, belonging to the British museum, which was originally sent to Sir Hans Sloane by governor Winthrop, of Connecticut, and was supposed to have been found near New London, in that state. About two years after, M. Ekeberg, a Swedish chemist, extracted the same substance from tantalite and yttro-tantalite, and, on the supposition of its being different from columbium, described it under the name of *tantalum*. The identity of these metals, however, was established, in 1809, by doctor Wollaston.—Columbium exists in its ores as an acid, united either with the oxides of iron, manganese and tin, as in the columbite or tantalite: or in combination with the earth yttria, as in the yttro-columbite, or yttro-tantalite. This acid is obtained by fusing its ore with three or four times its weight of carbonate of potash, when a soluble columbate of that alkali results, from which columbic acid is precipitated as a white hydrate by acids. When this acid is exposed to the united agency of charcoal and intense heat, it is reduced to the metallic state. The metal is brittle, of an iron-grey colour, and feebly-metallic lustre. Its specific gravity is 5.6. It is not attacked by the nitric, muriatic or nitro-muriatic acids, but is converted into the acid by being heated with potash or nitre. Columbium has hitherto been obtained in very minute quantities, and has never been applied to any economical purpose. Columbite, the ore from whence it is obtained, has of late been discovered in several places in New England.

COLUMBO; a city of Ceylon; 70 miles, S. W. Candy; lon. 79° 47′ E.; lat. 6° 58′ N.; population estimated at upwards of 50,000. It is the capital of the island, the seat of government, situated on the S. W. part. The plan of the city is regular, nearly divided into four quarters by two principal streets, and the town is built more in the European style than most garrisons in India, though but few of the houses have more than one story. Nearly all the foreign trade of Ceylon is carried on from Columbo; but the harbour is difficult of access, and unsafe for large vessels. Scarcely any place in the world displays a greater variety of nations, manners, and religions.

COLUMBUS, Christopher (in Spanish, *Christoval Colon*; in Italian, *Cristoforo Colombo*, which is his real name), one of the greatest men mentioned in history, was born in Genoa, about 1435, and not, as some assert, at Cuccaro, in Montferrat. His father, Domenico Colombo, a poor woolcomber, gave him a careful education. He soon evinced a strong passion for geographical knowledge, and an irresistible inclination for the sea, and, at fourteen years of age, he began to navigate in the Mediterranean. We afterwards find him in command of a vessel, in a squadron which a relation of his had fitted out against the Mohammedans and Venetians. In one of his engagements with the Venetians, the vessel which he commanded took fire, and Columbus saved his life by swimming ashore. Portugal at that time attracted the attention of Europe by her maritime expeditions, and Columbus repaired to Lisbon, where he found relations and countrymen. Here he married the daughter of Bartolomeo de Palestrello, a distinguished navigator, who had participated in the discovery of Porto Santo, and had left many charts and nautical instruments. Columbus made use of these materials, and his opinion that the other side of the globe contained land, belonging to Eastern Asia, and connected with India, which was, as yet, little known, became more and more fixed. Whilst the Portuguese were seeking for it by a south-east course round Africa, he was convinced that there must be a shorter way by the west. He applied in vain to his native city, Genoa, for assistance, and equally fruitless were his endeavours to interest John II. of Portugal in the enterprise. He then determined to apply to the Spanish court. His brother Bartholomew sailed for England, but was captured by pirates. Columbus explained his plan to Ferdinand and Isabella of Spain, and, after an eight years' struggle with the obstacles thrown in his way by ignorance and malice, he received three small vessels, with 120 men. Two of the vessels were light barques, called *caravals*, like the coasting craft of modern days, with forecastles and cabins for the crew, but without a

deck in the centre. These caravals, called the *Pinta* and the *Nina*, were commanded by two brothers named *Pinzon*. The third vessel, on board of which was Columbus, was completely decked. The dignity of high-admiral and viceroy of all the countries he might discover was conferred on him, the former to be hereditary in his family. A certain share of the profits was secured to him by a written contract with the sovereigns.

It was early in the morning of Friday, on the third of August, 1492, that Columbus set sail from the port of Palos. Eighteen years had elapsed since he had first conceived the idea of this enterprise. Most of that time had been passed in almost hopeless solicitation, amidst poverty, neglect, and ridicule; the prime of his life had been wasted in the struggle, and when his perseverance was finally crowned with success, he was about fifty-six years of age. Nor should it be forgotten that it was to Isabella (q. v.) alone that he was finally indebted for the means of executing his project, which had been coldly rejected by the prudent Ferdinand. Having provided himself, at the Canary Islands, with fresh water, he sailed south-west into an ocean never before navigated. But when twenty-one days had elapsed without the sight of any land, the courage of his men began to sink. It was certain, they said, that they should perish, and their visionary commander ought to be forced to return. Some of them even proposed to throw him overboard; and Columbus had to exert all the powers of his daring and commanding spirit, to prevent an open rebellion. A phenomenon, which surprised even him, filled his pilots with consternation: the needle deviated a whole degree. But the sea appeared suddenly covered with grass, and again showed symptoms of shoals and rocks. Numbers of birds were also seen. Columbus sailed in the direction from which they flew. For some days the voyage was continued with revived courage, until, at last, the dissatisfaction of the crews began to break out into open violence; but Columbus, after endeavouring in vain to pacify his men by promises, finally assumed a different tone, and told them it was useless to murmur; that he was determined to persevere. Fully convinced that he must be near the land, he promised a reward to whosoever should first discover it. All hands remained on deck during the night, and, after Columbus had himself discovered land, Oct. 11, and pointed it out to some of his friends, the cry of *Land* was raised at midnight from the Pinta, which, from her superior sailing, kept ahead of the other vessels. It was the island of Guanahani. On landing, Columbus threw himself upon his knees and kissed the earth, returning thanks to God. The natives collected round him in silent astonishment, and his men, ashamed of their disobedience and distrust, threw themselves at his feet, begging his forgiveness. Columbus, drawing his sword, planted the royal standard, and in the name of his sovereigns, took possession of the country, which, in memory of his preservation, he called *St Salvador*. He then received the homage of his followers, as admiral and viceroy, and representative of the sovereigns. Being informed by the natives that there was a rich gold country towards the south, Columbus directed his course towards that region, and discovered Cuba on the 28th October, and Espanola (Hispaniola, Hayti) on the 6th December; but as one of his vessels was wrecked, and the other separated from him, he resolved to carry the news of his success to Spain. Having built a wooden fort from the wreck of his vessel, he left in it thirty-nine volunteers, and set out on his return, January 4, 1493. The day after he left the island, he met the Pinta, which had been missing. Both vessels were afterward nearly wrecked in a tremendous storm. Columbus, more interested for his discovery than for himself, wrote an account of his voyage on a piece of parchment, which he secured in a cask, and threw the whole overboard, in the hope that it might be carried ashore. He had hardly finished this work when the gale subsided. March 15, he re-entered the port of Palos, amid the acclamations of the people, the thunder of cannon, and the ringing of bells. He hastened immediately to Barcelona, where the court then was, and entered the city in a triumphal procession, with the productions of the newly-discovered countries carried before him. A chair was placed for him next to the throne, and, seating himself, he gave an account of his discoveries. He was created a grandee, and all the marks of royal favour were lavished upon him.

September 25, 1493, he set sail from Cadiz with three large ships of heavy burden, and fourteen caravals, carrying 1500 men. Nov. 2, he arrived at Hispaniola. Finding the colony he had left destroyed, he built a fortified town, which he called, in honour of the queen, *Isabella*, and of which he appointed his brother Diego governor. He immediately left the island, in order to make new discoveries, visited Jamaica, and, returning after a voyage of five months, worn down with fatigue, found, to his great joy, that his brother Bartholomew, who had escaped from his captivity, had arrived at Isabella, with provisions and other supplies for the colony. Meanwhile, a general dissatisfaction had broken out among his companions, who, instead of the expected treasures, had found hardships and labour. They set on foot many calumnies, and gave the most unfavourable description of the country and the viceroy. Columbus thought he could not better oppose these reports than by sending considerable treasures to his sovereigns, and, for this purpose, collected gold from the natives, which was not done without violence and some cruelty. Aguado, a personal enemy of Columbus, was sent as commissioner to investigate the complaints against the great discoverer, who, thinking it time to vindicate himself in the presence of his sovereigns, prepared to return to Spain. Having appointed his brother Bartholomew *adelantado* or lieutenant-governor, he embarked for Spain, March 10, 1496, with 225 Spaniards and 30 natives. In Spain, calumny was silenced by his presence, and probably still more by his treasures. Yet his enemies were powerful enough to detain the supplies intended for the colony a whole year, and to prevent the fitting out of a new expedition for Columbus another year.

It was not till May 30, 1498, that he sailed, with six vessels, on his third voyage. To man these vessels, criminals had unwisely been taken—a measure which Columbus himself had advised, and which had been taken up, with great satisfaction, by his enemies. Three of his vessels he sent direct to Hispaniola; with the three others, he took a more southerly direction, for the purpose of discovering the main land, which information derived from the natives induced him to suppose lay to the south of his former discoveries. He visited Trinidad and the continent of America, the coasts of Paria and Cumana, and returned to Hispaniola, convinced that he had reached a continent. His colony had been removed from Isabella, according to his orders, to the other side of the island, and a new fortress erected, called *St Domingo*. Columbus found the colony in a state of confusion. After having restored tranquillity by his prudent measures, in order to supply the deficiency of labourers, he distributed the land and the inhabitants, subjecting the latter to the arbitrary will of their masters, and thus laying the foundation of that system of slavery which has lasted down to our time. His enemies, in the

mean time, endeavoured to convince his sovereigns that he had abused his power, and that his plan was to make himself independent, till, at last, even Isabella yielded to the wishes of Ferdinand, who had previously become convinced of the truth of the slanders. Francisco de Bobadilla was sent to Hispaniola, with extensive powers, to call the viceroy to account. As soon as he reached the island, he summoned Columbus to appear before him, and put him in irons. His brothers were treated in the same manner. All three were sent to Spain, accompanied by a number of written charges, drawn up from the statements of the bitterest enemies of Columbus. Columbus endured this outrage with noble equanimity, and wrote, as soon as he had arrived in Cadiz, Nov. 23, 1500, to a lady of the court, vindicating his conduct, and describing, in eloquent and touching language, the treatment he had received. Orders were immediately sent, directing him to be set at liberty, and inviting him to court, where his sovereigns received him with the same distinction as formerly. Isabella was moved to tears, and Columbus, overcome by his long-suppressed feelings, threw himself upon his knees, and, for some time, could not utter a word for the violence of his tears and sobbings. He then defended himself by a simple account of his conduct, and was reinstated in his dignities. Ferdinand even consented to dismiss Bobadilla, which was intended for the first step towards the promised restoration of the great discoverer to his dignities. But these dispositions in the monarchs were soon changed. There was much talk of great expeditions, and, in the mean time, Nicholo de Ovando y Lares was sent as governor to Hispaniola. Columbus still urged the fulfilment of the promises solemnly made to him; but, after two years of delay, he became convinced that there was no intention to do him justice.

But his noble mind had now learned how to suffer, and he was principally desirous of completing his work. Supposing the continent which he had seen to be Asia, he did not doubt that he should find, through the isthmus of Darien, a way to the East Indies, from which the first fleet of the Portuguese had just returned, richly laden. In four slender vessels supplied by the court for this purpose, Columbus sailed from Cadiz, in his fourth and last voyage, March 9, 1502, with his brother Bartholomew and his son Fernando; arrived contrary to his wishes, off St Domingo, June 29, and was denied permission to enter the port, for the purpose of refitting his vessels, and escaping an approaching storm. He succeeded, however, in anchoring his small squadron in a place of safety, and rode out the storm, whilst eighteen vessels, which had put to sea in spite of his warning, were almost entirely destroyed. He then continued his voyage to Darien, but without finding the expected passage. Two of his vessels were destroyed by a gale; the two others were wrecked off Jamaica, where he was scarcely able to save himself and his companions. Here the severest trials awaited the constancy of Columbus. Separated from the other part of the world, his destruction seemed to be certain. But he succeeded in procuring a few canoes from the natives, and prevailed on some of his boldest and best men to attempt a voyage to Hispaniola, in two canoes, in order to inform the governor of his situation. Several months elapsed without a glimpse of hope. Part of his companions, reduced to despair, rebelled, repeatedly threatened his life, separated from him, and settled on another part of the island. Here they alienated the minds of the natives, by their cruel treatment, so much that they ceased to bring them supplies. The death of all seemed inevitable; but Columbus, whose courage rose with the danger, preserved his men in this crisis. He had ascertained that a total eclipse of the moon was about to take place, and threatened the natives with the vengeance of his God if they should persist in their enmity. As a proof of his assertion, the moon, he said, would lose its light, in token of the chastisement which awaited them. When they beheld his threat verified, they hastened to bring him provisions, and implore his intercession with the Deity. But hostilities now broke out between him and the rebels, in which several of the latter were killed, and their leader was taken prisoner. After remaining a year on the island, relief at last appeared. The two canoes had reached Hispaniola in safety, but the messengers could not prevail on the governor to undertake the deliverance of the admiral. They finally bought a vessel themselves, and it was on board this ship that Columbus left Jamaica, June 28, 1504. He went to St Domingo, but only to repair his vessel, and then hastened back to Spain. He arrived in Spain sick and exhausted. The death of the queen soon followed, and he urged in vain on Ferdinand the fulfilment of his contract. After two years of illness, humiliations, and despondency, Columbus died at Valladolid, May 20, 1506, in the seventieth year of his age. His remains were transported, according to his will, to the city of St Domingo, but, in 1795, on the cession of Hispaniola to the French, they were removed, with great pomp, to the cathedral of Havannah, in Cuba. The chains which he had worn, he kept hanging in his cabinet, and requested that, when he died, they might be buried in his grave. A splendid monument was erected in honour of him, in a Carthusian convent at Sevilla, where his body was first deposited.

In the vigour of manhood, Columbus was of an engaging presence, tall, well formed, and muscular, and of an elevated and dignified demeanour. His visage was long, his nose aquiline, his eyes light-gray, and apt to enkindle. His whole countenance had an air of authority. Care and trouble had turned his hair white at thirty years of age. He was moderate and simple in diet and apparel, eloquent in discourse, engaging and affable with strangers, and of great amiableness and suavity in domestic life. His temper was naturally irritable, but he subdued it by the benevolence and generosity of his heart. Throughout his life, he was noted for a strict attention to the offices of religion; nor did his piety consist in mere forms, but partook of that lofty and solemn enthusiasm, with which his whole character was strongly tinctured. Of a great and inventive genius, a lofty and noble ambition, his conduct was characterized by the grandeur of his views and the magnanimity of his spirit. The two men who have probably done most, in modern times, to change the face of the world have been Italians—Columbus and Napoleon.—For further information respecting the life of Columbus, we refer the reader to the life of Columbus (in Italian), by Bossi (French translation, Paris, 1824); Columbus and his Discoveries, by Spotorno; Memorials of Columbus (original writings of Columbus, translated from the Spanish and Italian, London, 1824); and *Codice Diplomatico Colombo Americano*, Genoa, 1823, 4to. Navarete's Collection of the Voyages of Discovery made by the Spaniards (collected from the archives), Madrid, 2 vols. 4to, and French, Paris, 1825, contains the journals of Columbus, and many letters, then first printed. The latest account of the great discoverer is Washington Irving's Life and Voyages of Columbus, 3 vols. 8vo, London, 1828, abridged by the same, 1 vol. 12mo, New York, 1829.

COLUMBUS; a post-town of the United States, the seat of the government of the state of Ohio, in Franklin county, on the east bank of the Scioto

near the centre of the state; lat. 39° 47′ N.; lon. 83° 8′ W.; population in 1828, about 1500. It was first laid out in 1812, and is pleasantly situated on rising ground, just below the confluence of Whetstone river with the Scioto.

COLUMELLA, Lucius Junius Moderatus, the most learned practical writer on agriculture among the ancients, born at Cadiz, in Spain, lived about the middle of the first century, and wrote twelve books, which are still extant, *De Re Rustica*, one of which, on gardening, is in verse. He treats, in this work, of all the branches of agriculture. He also wrote a book on the cultivation of trees. The best edition is by Gesner, in his collection *Scriptores Rei Rusticæ*, Leipsic, 1735, 2 vols. quarto.

COLUMN (*columna* Lat.), in architecture; a round pillar. In the earliest periods of the world, the column was merely the trunk of a tree, or its imitation in stone, used to support the roof. The parts of a complete column are its base, on which it rests, its body, called the shaft, and its head, called the capital. Columns are used to support the entablature of an order, which has also its proper division. (See *Architecture* and *Order*.) In the most ancient times, columns of wood were the most usual, as being the most easily wrought. In countries like Egypt, where timber fit for construction is scarce, and stone abundant, the latter became the principal material for columns, and those of Egypt are remarkable for the beauty of their workmanship, and the durability of their materials. The Greeks used marble of the finest kind, with which their country abounded, for their columns; and other nations, the stone or material of their country. The Greeks properly considered the column as an essential part of the architecture of their temples and never used it as a mere decoration. The manner of constructing the columns of all the orders rests upon similar principles. They are all divided into three primary parts or divisions, the base, the shaft, and the capital, except the Doric order, which has no base. The lowest or thickest part of the shaft is used by architects as the universal scale or standard whence all the measures which regulate and determine heights and projections are taken; and this standard or scale must be understood before any architectural design can be commenced. The universal architectural scale is called a diameter, and is the diameter of the lowest or the largest part of the column; and, unlike the foot, inch, or yard, is as various as the size of columns. By the diameter, of course, is meant that of the circle which forms the bottom of the column. Half of this diameter, or the length of the radius which forms the circle, is called a *module*, and is used, as well as the diameter, as a primary standard of mensuration, by some writers upon architecture. These measures of length are subdivided as follows, namely, the diameter into sixty parts, and the module into thirty parts, each part being the same in length, which are called minutes. Both mensurations are the same, only under different denominations; as, for instance, one author says a column, which always includes the base, shaft, and capital, is six diameters, twelve minutes high, while another would say of the same column and its admeasurements, that it is twelve modules and twelve minutes, both meaning the self-same dimension. The *Doric* column has no base. The *Ionic* column has one peculiar to itself, called the *Attic*, which, with that of the *Corinthian* order, is described under the article *Architecture, Grecian Style of*. The shafts of the different orders differ in height, and even in various examples of the same order, as may be seen in the articles *Architecture* and *Order*. The capitals are also as various.

Columns are either plain or fluted; and the flutes and manner of dividing them are different in the Doric and Corinthian orders. The Ionic flutes much resemble the Corinthian, and, in many instances, are exactly similar. Twisted, spiral and rusticated columns, like those of Borromini, in various buildings in Rome, and the Baldocchino of St Peter's, are in bad taste, and to be avoided. Columns are also often used for monuments, as well as for architectural supports; like the Trajan and Antonine columns in Rome, and that called the *Monument* in London. There are also *astronomical columns*, like that which Catharine de' Medici erected at the Halle au Blé, in Paris. The Romans had their *columna bellica*, which was near the temple of Janus, and from which war was proclaimed by the consul casting a javelin from it towards the country of their enemy; also *chronological columns*, whereon they inscribed historical events according to the order of time. They had also a *lacteal column*, which was erected in the vegetable market, and contained in its pedestal a receptacle for infants that were abandoned by their parents. (See *Juvenal*, Satire vi. 601.) The *legal column* was one on which the ancients engraved their laws; the *limitative* or *boundary column* marked the boundary of a state or province; the *manubial column* was ornamented with trophies and spoils taken from the enemy, the *rostral column* with the prows (*rostra*) of the ships obtained in a similar manner. The first column of this description was that which was erected in the capitol, on the occasion of the naval victory which Caius Duillius obtained over the Carthaginians. It is now on the balustrade of the grand staircase of the Campidoglio. Augustus raised four, decorated with the prows of the vessels which were taken from Cleopatra. Two were also erected to the honour of Caius Menius, for a naval victory over the Latins and Antiates. The *sepulchral column* was elevated upon a sepulchre or tomb, with an epitaph engraved upon its shaft. The *triumphal column* was erected by the Romans in commemoration of a conqueror to whom had been decreed the honours of a triumph. The joints of the stones were concealed by crowns obtained by military conquests. The columns of Trajan and Antonine, besides their specific objects, are also triumphal columns. The British parliament, when they voted the magnificent palace of Blenheim to the great duke of Marlborough, also erected a triumphal column in the park. On the four sides of the pedestal are inscribed descriptions of the victories of that great commander, and his statue is upon the abacus, supported by figures of captured enemies, and surrounded by trophies.

The *milliary column*, or *milliarium aureum*, of Rome, was originally a column of white marble, which Augustus erected near the temple of Saturn, in the forum, as a centre whence the account of the miles began in the calculation of distances from the city. This celebrated column is still in existence, being placed on the stylobate in front of the Campidoglio, the modern capitol of Rome. It is a short column, with a Tuscan capital, and has a ball of bronze, as a symbol of the globe. It was called *golden*, either because it was once gilded all over, or at least the globe and ornamental accessories. As a companion to it is a similar column, bearing on its summit a vase, containing the ashes of Trajan.

Among the principal insulated commemorative or triumphal columns now remaining is *Pompey's pillar*, or *column*, at Alexandria in Egypt. Opinions have differed much as to the date of its erection, and to whose memory it was raised. Its style is that of the age of Diocletian and of the lower empire. Engravings and descriptions of this ancient monument may be

found in the works of Denon, and other travellers in Egypt. It is of Thebaic granite, of the Corinthian order, and according to the best authorities, measures sixty-four feet in the shaft, about five feet in the base, ten feet in the pedestal, and from ten to eleven in the capital. A Greek inscription was discovered by the British, who were there at the time of Sir Ralph Abercrombie's expedition, which dedicates it to the emperor Diocletian, under the government of the prefect Porcius. The opinion sustained by its common name, that it was erected by Cæsar to commemorate his victory over Pompey, has had respectable supporters. Denon and some other writers have supposed it part of an immense building, of which they trace the ruins adjoining. It has been sometimes thought to commemorate the favours of Adrian to this city, and still more frequently those of Severus; while some writers ascribe its erection to Ptolemy Philadelphus, in memory of his queen Arsinoe; and others to Ptolemy Euergetes.

The *Trajan column* is one of the most celebrated monuments of antiquity. Its height, including the pedestal and statue is 132 feet. This monumental column was erected in the centre of the forum Trajani, and dedicated to the emperor Trajan for his decisive victory over the Dacians, as is testified by the inscription on the pedestal. It is of the Doric order, and its shaft is constructed of thirty-four pieces of Greek marble, joined with cramps of bronze. For elegance of proportion, beauty of style, and for simplicity and dexterity of sculpture, it is the finest in the world. The figures on the pedestal are masterpieces of Roman art. It was formerly surmounted by a statue of Trajan, which has been succeeded by a statue of St Peter.

The *column of the emperor Phocas* is near the temple of Concord. It is of Greek marble, fluted, and of the Corinthian order, four feet diameter, and fifty-four feet high, including the pedestal. The *Antonine column* was erected by the Roman senate to the glory of Marcus Aurelius, for his victories over the Marcomanni, in the reign of Commodus. Aurelius afterwards dedicated it to his father-in-law, Antoninus Pius. According to a rigid admeasurement, made by M. de la Condamine, this column is 116 French feet in height, and eleven in diameter. It is built entirely of marble, and encircled with *bassi rilievi*, which form twenty spirals around its shaft. It has been well illustrated by engravings and descriptions by Pietro Santi Bartoli. It is in every respect inferior to that of Trajan as a work of art, particularly in the style and execution of the sculptures. It was repaired, in 1589, by Fontana, under the pontificate of Sextus V. who placed a colossal statue of St Paul upon its summit. There is also in Rome another column bearing the same name, situated on the Monte Cittorio. Its shaft is of a single piece of Egyptian granite, forty-five feet in height, and five feet eight inches in diameter. Its pedestal is ornamented with *bassi rilievi*, representing the apotheosis of Antoninus and Faustina, and other events relating to the history of Rome. It was repaired by Lambertini. Pius VI. removed the *bassi rilievi* to the Vatican. There is an engraving of it in the 5th volume of the *Museo Pio-Clementino*. On one of its sides it has the following inscription:—"Divo Antonino Avgvstino pio Antoninvs Avgvstvs et Vervs Avgvstvs filii."

Till the commencement of the 18th century, there were to be seen at Constantinople two insulated columns, ornamented with *bassi rilievi*, in the style of the Trajan column at Rome. One was erected in honour of Constantine, and the other of Arcadius or Theodosius. Of the latter there is nothing left but its granite base, the column having been destroyed by the Turks. It had been several times damaged by earthquakes, and they were fearful of its falling. The *Constantine column* was composed of seven large cylindrical blocks of porphyry, and was originally surmounted by a statue of Constantine. After having been several times damaged by fire, it was repaired by the emperor Alexis Comnenus, as is indicated by an inscription in Greek.

Of modern columns, that called the *Monument*, at London, which was erected in commemoration of the great conflagration of 1666, is at once the loftiest, the best constructed, and the most beautiful. It is a Doric fluted column, 202 feet high from the bottom of the pedestal, which is ornamented with *bassi rilievi* of Charles II. and his court giving protection to the fallen city, and various inscriptions, to the top of the vase of flames, by which it is surmounted. There are, also, several smaller columns, but of beautiful proportions, in various parts of England, in imitation of the above, but mostly of the Grecian or pure Doric order, as the Anglesea column, erected in commemoration of the battle of Waterloo and the noble earl of that name, in the island of Anglesea; the column at Shrewsbury, erected in commemoration of the same event and of another noble general, lord Hill; the Nelson columns, at Yarmouth, and in Dublin; the Wellington column, at Trim, in the county of Meath, Ireland, &c. To the above list we may add the *Washington monument*, at Baltimore, on which a colossal statue of Washington is placed. The pillar is of the Grecian Doric order, and of very massive proportions. It stands on a grand base or zocle, and is surmounted by a circular pedestal, on which the statue rests. This base or zocle of the monument is fifty feet square, and twenty-five feet high; the column twenty feet in diameter, and, with its sub-base, 130 feet high; the capital is twenty feet square. The statue is fifteen feet high, and the whole height of the monument, from the pavement, including the statue, will be 176 feet. As it stands on a hill 100 feet high, this structure rises 276 feet above tide. It is constructed of white marble, which is slightly variegated, and is a very conspicuous object to every one approaching the city, whether by land or water.

COLUMN, in military tactics; a deep, solid mass of troops, formed by placing several bodies of men behind each other (sections, platoons, companies, squadrons, and even several battalions). The column is either an open or a close one (with intervals, or having the sections close behind each other:) it may be formed either for marching or for attack. By means of columns, it is possible to march in places where it would be impracticable to move with unbroken lines. They also increase the force and steadiness of troops, both in attack and defence. The drawing up of the infantry in line is advisable, where there is no obstacle in the ground to prevent advancing in this order, or when the enemy is to be received with the fire of musketry, and where cannon-balls and grenades are more to be feared than case-shot and musketry. The order in mass is to be preferred when you have to move in a broken or hilly country, where a charge is intended, in which physical force, given by the depth of the column, is necessary, and the fire of the enemy is to be avoided as much as possible (which, on account of the small breadth of the column, is comparatively ineffectual), and also where a charge, particularly of cavalry, is apprehended. Though a cannon-ball, and still more a grenade, in the midst of the mass, causes a greater havoc, the probability of being hit is diminished, on account of the small front exposed. An objection to columns, founded on the difficulty of moving so dense a mass, and of

changing it into a line, has been removed, in modern times, by the practice of making the columns consist of only one battalion, and by disposing these single battalions near each other in such a way as to support one another by their fire, instead of arranging them uselessly behind each other. By the usual way of forming the columns towards the centre, those have received such a movability and facility of development, that a line may be restored in two or three minutes. Almost all battles are fought, at present, by such small columns, which, when the order in line is judged more for the purpose, may be changed into lines, and which, besides, form the best squares for resistance against attacks of cavalry, by presenting a front to all sides, and unite many other advantages. In the case of cavalry, also, attacks may be made either in column or in line. The charge in close columns, which is in use particularly with the French, is of the greatest effect when it succeeds; but when it fails the whole body of assailants is exposed to annihilation, or to rout, as no support, no development, nor orderly retreat, is possible. The attack with columns at some distance from each other has this advantage, that, if the first division fails, the subsequent ones may succeed; moreover, the facility of manœuvring is much greater. This mode of attack is particularly advisable in assaulting squares of infantry. Marching and fighting in lines, however, are the modes usually practised by cavalry.—*Column-roads* are such roads as may be passed with all kinds of arms: when the ordinary road is ruined, they are laid out across the fields, and marked by poles with straw (*jalons*).

COMB (*camb*, Saxon); an instrument to separate and adjust the hair, too well known to need description. We have no certain authority, either from busts or medals, that either the Greek or the Etruscan women used this useful and ornamental appendage to their hair; although, in most of them, it is carefully and gracefully arranged. Nor in the articles that have been disinterred at Volterra and other Etruscan cities, where abundance of utensils and instruments of the female toilet have been found, has there been a single comb discovered. There is, therefore, no authority, with which we are at present acquainted, to inform us from whom the Romans borrowed this article of the toilet. Many of their sepulchral inscriptions are dedicated to their dressing maids (*ornatrices*). It is probable that the combs of the Romans were of ivory, box, gold, and silver; but, according to Guasco, they were also of iron and of bronze. In the work of that author, *Delle Ornatrici*, there are several representations of ancient Roman combs. One, in particular, at page 63, that was in the *museum Setala*, at Milan, is a long one of box, of which the handle is overlaid with ivory, and appears to have been ornamented with a small meander in gold. It has two rows of fine teeth, delicately wrought and well proportioned. Canova and other modern sculptors have made great use of the comb in their female busts, to which they add a grace and elegance unknown to those of the ancients.

COMBAT, in law, or Single Combat, denotes a formal trial, between two champions, of some doubtful cause or quarrel, by the sword or batoon. This barbarous way of deciding controversies was, in the middle ages, very common, not only in criminal, but also in civil causes. The form and ceremony of the combat are described in the *Grand coutumier* of Normandy. The accuser first swore to the truth of his accusation; the accused gave him the lie; upon which he threw down a pledge of battle, and the parties were committed to prison till the day of combat. The legal combat belongs to the same class of absurdities as the formal trial of witches. See *Duel* and *Champion*.

COMBINATION, in Mathematics, is the variation or alteration of any number of figures, letters, colours, sounds, &c., in all the different manners possible. The parts combined are called *elements*.—The *doctrine of combination* is that branch of mathematics which teaches the results arising from all possible combinations, and gives rules respecting them. *Combinatory analysis* is the application of the doctrine of combination to analysis, and constitutes a branch of science often very involved. A system of characters is appropriated to this purpose. Hindenburg, of Leipsic, in 1778, gave it the character of an independent science; and it has been of important service in relation to the higher branches of mathematics. (See Weingartner's *Lehrbuch der combinatorischen Analysis*, Leipsic, 1801, 2 vols.) Permutations are those combinations in which, each time, all the elements are used, and the object is to determine how often they change their place, for instance, *a b c d*, *a c b d*, *b d a c*, &c. The number of possible changes or combinations is found by multiplying the terms 1, 2, 3, &c., continually into each other; thus, $2\times3=6$; $6\times4=24$; $24\times5=120$, &c. Thus the combinations of five quantities amount to 120. The changes that may be rung on twelve bells amount to 479,001,600; and the twenty-four letters of the alphabet admit of 62,044,840,173,323,943,936,000 changes or combinations.

COMBUSTION. It is not easy to give a correct definition, or to assign a general cause, of this familiar phenomenon. It may, however, be described as the result of the combination of two or more bodies, attended with a disengagement of heat and light. This description distinguishes *combustion* from *ignition*, which is merely the result of an elevation of the temperature, without any chemical combination. Fire was formerly considered as an element, which had the power of converting certain bodies into its own nature; but the progress of chemical science soon showed the error of this notion. Stahl's celebrated theory was founded on the hypothesis of the existence of a substance which he called *phlogiston*. Every combustible body was supposed to contain this substance, which was disengaged by combustion: the loss of the phlogiston was the cause of the residuum being incombustible. The heat and light were attributed to the violent agitation of the phlogiston at the moment of its disengagement. The discoveries of Black and Priestley opened the way to the system of Lavoisier, which, in 1785, entirely supplanted the theory of Stahl. During the conversion of solids into fluids, and of fluids into vapours, there is a considerable absorption of heat: when, on the contrary, vapours and liquids are restored to the fluid and solid form, the heat which they contain is evolved, and passes from the latent to the sensible state. (See *Caloric*.) These views were assumed by Lavoisier as the basis of his theory. Oxygen gas was considered as a compound of a peculiar basis, united to the matter of light and heat, and combustion as the combination of oxygen with the burning body. During the combustion, the basis, combining with the combustible, augmented its weight and changed its properties; while the imponderable elements of the gas—light and heat—were developed in the form of flame. But facts prove this theory incorrect. In the first place, all the phenomena of combustion take place, in many cases, without the presence of oxygen. In the second place, there are many cases in which oxygen unites with bodies, without the evolution of light and heat, as during the change of some metals on exposure to the air. And, further, there are many instances in which combustion takes

place not only without condensation, but where gaseous matter is actually produced from solid matter, as in the inflammation of gunpowder. Besides, the evolution of light, if it were derived from the gas, should be proportional to the quantity solidified, whereas it depends chiefly on the combustible. The first of these objections to Lavoisier's theory, which is yet generally received, has been partly removed by modifying the definition so as to extend it to several other bodies, hence called *supporters of combustion*. (See *Chemical Classification and Nomenclature*.) The definition which we have given of this phenomenon at the beginning of this article is merely a description. The question arises, Whence come the light and heat? They are generally referred to the condensation which is almost always a necessary consequence of a chemical combination; but we have already seen that, in some cases, they are produced where the component parts actually pass from a solid to a gaseous state. It seems probable, in the present state of our knowledge, that they may be attributed to the disengagement of the electric fluid. "In every chemical combination," says Berzelius, "there is a neutralization of opposite electricities, and this neutralization produces the heat and light in the same manner as it does in the Leyden jar or the galvanic battery." But to this it may be objected, that, if electricity were the cause of the disengagement of the heat and light, they would always bear a fixed proportion to each other. This is not the case: the combustion of oxygen and hydrogen disengages a very great quantity of caloric, but very little light; that of phosphorus and oxygen produces opposite results. There is, then, no theory of combustion at present received, which will explain all the circumstances of this phenomenon. If there be any one general cause, it must be one which, like affinity, is modified by the nature of the agents and the peculiar circumstances of their mutual action.

COMEDY. See *Drama*.

COMENIUS, John Amos, a benefactor of mankind, by the improvements which he introduced into education, was born March 28, 1592, in the village of Comna, near Brumau, in Moravia; hence the name which he assumed: his real one is not known. His parents, belonging to the Moravian denomination, had him educated at Herborn. In 1616, he received an appointment as teacher, in Fulnek, which, in 1618, was plundered by the Spaniards. Comenius lost his papers, and all that he possessed, and fled to Poland, where, in 1632, he was elected bishop of the Moravian and Bohemian Brethren in Lissa. In 1631, he published, at Lissa, his *Janua Linguarum reserata*, a work which was translated, within twenty-six years, into twelve European languages, also into Persian, Arabian, and Mongolian. In this, he laid down a new system for teaching languages to children by the use of visible signs, in order to facilitate the learning of words. His *Orbis pictus*, or the Visible World, was first published, in 1659, at Nuremberg. In 1641 he was invited to England, in order to introduce a better organization into the schools; but, as the civil war prevented the accomplishment of this plan, he went to Sweden, where the chancellor Oxenstiern became his patron. In 1656, he returned to Lissa, where he once more lost all his books and manuscripts on the burning of the town after the retreat of Charles X. Comenius died at Amsterdam, Oct 15, 1671. In the latter part of his life, he gave himself up to religious dreams, after the fashion of that time, and revered Bourignon (q. v.) as a prophetess. Adelung gives the number of his works as 92, but there are only 54 now extant.

COME SOPRA (*Ital.*; as above *or* as before); an allusion to the manner of performing some former passage, the style of which performance has been already denoted.

COME STA (*Ital.*; as it stands); an expression implying that the performer is not to embellish the passage with any additions of his own.

COMETS. Of natural appearances, there are few that have been regarded with more superstitious apprehensions than those bodies which occasionally appear in the sky, luminous, like the stars, but generally distinguished from these by a tail, or train of fainter light, bearing some resemblance to a tuft or lock of hair. Of this, the Latin name is *coma*, and in consequence, these bodies are called *comets*, to distinguish them from the other luminaries, which, whether near or remote, apparently fixed or movable, have not this train-like accompaniment. Comets are one of the three classes into which astronomers divide those celestial bodies that adorn the sky during the night. The stars, which retain their relative positions with regard to each other, and are at so great distances from the earth, that no means or instruments hitherto invented can measure them, are one class,—and a class not apparently connected with our sun, or deriving light or heat from that luminary. The planets, which change their relative positions among the stars, and of which our earth is one, form the second class. They are solid bodies, and not luminous in themselves, but shine merely by reflecting the light of the sun. The masses of the planets, their magnitudes, and their motions, have been all determined with the greatest accuracy; and the place that any one of them will occupy at any proposed point of time, can be calculated with the greatest ease, by any one acquainted with practical astronomy. The planets are, in their motions, governed by one uniform law. In the early ages, the planets were held to have certain influences upon individuals and nations. The comets, which are more singular in their form, and more varied in the times of their appearance, were still better adapted for superstitious purposes; and, accordingly, we find that their visits have been attempted to be connected with the great, more especially the calamitous, events of nations. The appearance of a comet is, however, no more a prodigy, and has no more influence upon the fate of men or of nations, than the appearance of the moon, or of a deciduous leaf upon a tree in spring. They are so distant, and either their motions are so rapid, or their substance is so rare that none of them have been found to have any material action upon such of the planets as they have come near, although the planets have had a considerable influence upon them. What the comets are, or what purposes they serve in the economy of creation, we do not know. As far as observation has gone, they are subject to the same laws as the planets, revolving about the sun in orbits or paths, with this difference, that their orbits are much more eccentric, or differ much more from circles, than the orbits of the planets; and thus, while they approach much nearer to the sun at one time of their revolutions, they recede correspondingly farther from it at another. The time since men had rational opinions on the subject has, however, been too short for verifying, by observation, the theory as applicable to the whole, or even the greater number of these bodies that have, from time to time, made their appearance.

Tycho Brahe was the first who expressed a decidedly rational opinion on the subject of comets. Finding, by careful observation, that the comet of 1577 had no diurnal parallax, which he could detect,—that is, that its place, when viewed from the surface of the earth, was not different from what it would have been if viewed from the centre; he properly concluded

that its distance from the earth must be greater than that of the moon, in which this parallax was apparent to him. This was one step; and it was an important one: it removed comets to such a distance from the earth, that their use could not well be supposed to be for it, or their influence upon it very great. The general law of the motion of bodies in free space, as well as his own particular observations on the comet of 1680, led Newton to conclude that the orbits of the comets must, like those of the planets, be ellipses, having the sun in one focus, but far more eccentric, and having their *aphelions*, or greatest distances from the sun far remote in the regions of space. The idea thus thrown out by Newton was taken up by Dr Halley, who collated the observations which had been made of all the twenty-four comets, of which notice had been taken previous to 1680. The results were abundantly curious; with but few exceptions, they had passed within less than the earth's shortest distance from the sun; some of them within less than one third of it; and the average about one half. Out of the number, too, nearly two thirds had had their motions retrograde, or moved in the opposite way to the planets. While Halley was engaged on these comparisons and deductions, the comet of 1682 made its appearance, and he set about observing it with great care, in order to determine the elements of its orbit. Having done so, he found that there was a wonderful resemblance between it and three other comets that he found recorded—the comets of 1456, of 1531, and of 1607. The times of the appearance of these comets had been at very nearly regular intervals,—at least, the differences had been only fractional parts of a year,—the average period being between 75 and 76 years. Their distances from the sun, when in *perihelion*, or when nearest to that luminary, had been nearly the same, being nearly six-tenths of that of the earth, and not varying more than one-sixtieth from each other. The inclination of their orbits to that of the earth had also been nearly the same, between 17° and 18°; and their motions had all been intrograde. Putting them together, Dr Halley concluded, that the comets of 1456, 1531, 1607, and 1682, were re-appearances of one and the same comet, which revolved in an elliptic orbit round the sun, performing its circuit in a period varying from a little more than seventy-six years to a little less than seventy-five; or having, as far as the observations had been carried, a variation of about fifteen months in the absolute duration of its year, measured according to that of the earth. For this variation in the time of its revolution, Dr Halley accounted upon the supposition that the form of its orbit had been altered by the attraction of the remote planets, Jupiter and Saturn, as it passed near to them; and thence he concluded, that the period of its next appearance would be lengthened, but that it would certainly re-appear in 1758 or early in 1759. Its doing so was, of course, the fact that was to be decisive of the orbits of comets, and that they were regular and permanent bodies, obeying the general laws of matter. Halley did not live to see the verification of his prediction; he died in the year 1742, at the advanced age of eighty-four.

Soon after his death, Clairault, D'Alembert, and Euler, three of the most eminent mathematicians of Europe, set about the solution of what is called "the problem of the three bodies;" that is to determine the paths described by three bodies, projected from three given points, in given directions, and with given velocities, their gravitating forces being directly as their quantities of matter, and inversely as the squares of their distances. The object of this problem is to find the disturbing effects that the bodies composing the solar system have upon each other; and it applies to comets, when within the limits of planetary action, as well as the planets themselves. After some errors, into which all the three had been led, and which gave a result that seemed to overturn the whole doctrine of gravitation, Clairault succeeded in obtaining an approximate solution, which agreed with and confirmed that theory. Having done so, he applied it to the calculation of the disturbed influence of Jupiter and Saturn, which Halley had predicted would retard the comet of 1682, in its re-appearance about 1758. The results of Clairault's calculations, were, that the comet would be retarded 100 days by the attraction of Saturn, and 518 by that of Jupiter, so that it would not come to the perihelion, or point of its orbit nearest the sun, till the 13th of April, 1759. Clairault, however, fixed certain limits, within which his calculations might probably be erroneous. It was eventually found that the difference between calculation and observation was less than that which he assigned. Clairault read his investigations to the academy of sciences in November, 1758; and, in little more than a month afterwards, the comet made its appearance; and it reached its perihelion on the 13th of March, in the following year, being thirty days earlier than he had calculated. Subsequent calculations enabled him to reduce the error to nineteen days; and, though the calculations of the disturbing forces were only approximations, enough had been done to prove the return, and determine the orbit of one comet, and give every reason for concluding that all comets, being bodies of the same class, are subject to the same general laws as the planets, and only vary from each other in the proportion and magnitude of their orbits. There was one further confirmation. Clairault had calculated that the node of the comet's orbit, or the point in which it cut the plane of the orbit of the earth, would advance 2° 33′ in absolute space, or 1° 29′ more than the equinoctial points, the precession of which, in the time of the comet's revolution, was 1° 4′; and observation gave exactly the same result; so that the only difficulty that remained in the doctrine of comets was in the estimation of the disturbances to which they are exposed from the other bodies of the system, more especially in the parts of their orbits most remote from the sun, where their motions are comparatively slow. Along with the period of this comet, and its perihelion distance, the magnitude and form of its path were known. Estimating the mean distance of the earth from the sun at 95,000,000 miles, the mean distance of the comet is 1,705,250,000 miles; its greatest distance from the sun, 3,355,400,000; its least distance, 55,100,000; and the transverse or largest diameter of its orbit, 3,410,500,000. Therefore, though its aphelion distance be great, its mean distance is less than that of Herschel; and, great as is the aphelion distance, it is but a very trifling fraction less than one five-thousandth part of that distance from the sun, nearer than which the very nearest of the fixed stars cannot be situated; and as the determination of their distance is negative and not positive,—a distance within which they cannot be, and not one at which they actually are,—the nearest of them may be at twice or ten times that distance. The comet of 1759 is, therefore, a body belonging to the solar system, and quite without the attraction of any body which does not belong to that system; and, as this is determined of one comet, analogy points it out as being the case with them all. M. M. Danosseau and Ponteculant, have calculated the return of this comet, on the 4th or 7th of November, 1835, which difference of three days, arises from their having taken different values for the masses of the planets. M.

Lubbock, has also investigated the subject, and the Nautical Almanack, for 1835, gives the results according to all the three. The comet of Halley has a period of about seventy-six years.

Besides the comet of 1759, of which there have been four authenticated returns, there are two others, of which something like a return has been traced at long intervals. One of these passed its perihelion at about eight o'clock on the morning of the 6th of July, 1264, reckoning meantime at Greenwich; and again, at a little past eight o'clock, on the evening of the 21st of April, 1556. Thus its period is about 292 years, and it may be expected in 1848. The perihelion distance, however, of this comet, which was more than half that of the earth, in 1264, had diminished an eighth part by 1556; and, as this must have caused a great elongation of its orbit, and as, from the length of its period, it must go far into the regions of space, there is no knowing how both the time of its revolution, and the form and position of its orbit, may have been altered.

The other comet, in the elements of whose orbit there is a similarity, from which its identity might be with probability inferred, appeared in 1532, and again in 1661, having thus a period of about 129 years. The return of that comet should, therefore, have been about 1790. In that year, three comets made their appearance; but neither of them resembled the one of 1661. Two of them moved in the opposite direction; and the remaining one was more than twice the distance from the sun in its perihelion, and its orbit at nearly double the angle with that of the earth.

The comet denominated *Encke's comet*, which has engrossed the public mind generally, and the scientific world in particular, has justly claimed and received the careful attention of astronomers, since its appearance in 1818 engaged professor Encke to consider the elements of its orbit. He was enabled to identify it with a comet described by Messrs Mechain and Messier in 1789, in the constellation Aquarius; also with a comet discovered in 1795, by Miss Herschel, in the constellation Cygnus; and with the comet in 1805. The investigation of this diligent professor enabled him, from his observations on its appearance in 1818, to foretell its re-appearance in 1822, and to state the probability of its not being observable in our climate. This anticipation was realized by its discovery in New South Wales, in the observatory of the governor, Sir Thomas Brisbane, June 2, 1822; and the accurate observations of Mr Runker, who discovered it, afforded Encke the means of reconsidering the true elements of its orbit, and with additional confidence computing its return for 1825. This occurred as was expected. The fresh data afforded by that return were carefully collated by the professor. It was observed again on October 30, 1828. This comet affords particular interest to the mind of the astronomer, though it does not offer a splendid object to his eye. Its orbit is an ellipse of comparatively small dimensions, wholly within the orbit of Jupiter: its period is 1260 days, or about three years and three tenths—a much shorter period than has hitherto appeared to comprise the revolution of any other comet, with the exception of one seen in 1770, which did not satisfy, as far as observation has been able to show, the prediction of the period of five years and a half, which was attributed to it. In the opinion of Encke and other astronomers, this comet may afford an opportunity of proving that the heavens oppose a resisting medium to the motion of bodies. The subject has been discussed in the Transactions of the Astronomical Society of London by the able mathematician Massotti; and that gentleman offers reasons for considering comets capable of affording a demonstration of a resisting medium in the heavens, though planets may give no indication of it.

Another comet, which encourages the anticipation of much astronomical gratification, is one which Biela discovered, Feb. 27, 1826, and which was afterwards seen by Gambart and others. It seems to possess claims to the attention of astronomers similar to that of Encke, it being conceived to revolve about the sun in about six years and seven-tenths, and to be the same as the comet which appeared in 1772, and that which appeared in 1806. Encke's comet was in its perihelion, by computation, Jan. 10. 1829.

Two other comets remain yet to be noticed, the elements of which have been calculated, but which have not as yet been confirmed by returns. The orbit of the first was calculated by Newton, from its appearance in 1680, and he estimated the periodic time to be 575 years. It may therefore be expected in 2255. The second appeared in 1556, is supposed to have a period of 292 years, and will therefore return in 1848.

The comet of 1770, to which allusion has been made, would lead us to conclude that we are still ignorant of many of the causes by which the form of the orbits of comets, and the times of their revolution and return, may be disturbed. That comet moved almost in the plane of the earth's orbit, having an inclination of only about a degree and a half; it had been observed with great care; and the result of the observations was, that it should return about every five years and a half. Instead of going out of the system, as may be presumed to be the case with those comets that have long periods and eccentric orbits, its greatest distance could not be much greater than that of Jupiter, while its mean distance from the sun was not much more than three times the perihelion distance of the earth. No comet, at all answering to that one, has, however, been again discovered; and therefore the conclusion is, that there are, within the system itself, causes which can completely alter the motions of these bodies; but what those causes are, other than the attraction of the planets, has not yet been ascertained.

One remarkable difference between the comets and the planets is in the angles which their orbits make with that of the earth. Leaving out the small planets that have recently been discovered, all the others are contained within a zone extending only 7° on each side of the earth's orbit; and, with the exception of Mercury (by far the smallest of the *old* planets), they are within half that space. But the orbits of the comets are at all possible angles; and the number increases with the angle, so that they approximate to an equal distribution, in all directions, round the sun as a centre. The numbers that have been observed are as follows:—Under 10° of inclination, 8; under 20°, 19; under 30°, 26; under 40°, 37; under 50°, 47; under 60°, 63; under 70°, 79; under 80°, 88; and under 90°, about 100. Thus by far the greater number of the comets have their paths out of the direction of those of the planets; and hence, though they be bodies of such consistency as that their collision with the planets would produce serious consequences, there is but little chance that such collision can take place. The comets that have been observed have made their passages through very different parts of the solar system: 24 have passed within the orbit of Mercury; 47 within that of Venus; 58 within that of the Earth; 73 within that of Mars; and the whole within that of Jupiter. Of a hundred, or thereabouts, mentioned by Lalande, about one-half have moved from west to east, in the same direction as the planets, and the other half in the opposite direction. The direct and retrograde

ones do not appear to follow each other according to any law that has been discovered. From 1299 to 1532, all that are mentioned were retrograde; and five that were observed from 1771 to 1780 were all direct.

Being quite ignorant both of the size of the comets, and their quantities of matter, we can form no conclusion as to their effects, even upon the positions of the planets. Hitherto, their influence, if anything, has been very small; for, within the limits that must be allowed for error, even in the best tables that are calculated upon an approximation, the whole of the irregularities are explainable upon the hypothesis of planetary disturbance alone; and the system appears to have gone on just as if there had been no comets in it. That the comets are formed of matter of some sort or other we know, from the dense and opaque appearance of their nucleus, as well as from the action of the planets upon them; but, as their action upon the planets has not been great, or even perceptible, we are led to the conclusion that they are not bodies of the same density or magnitude as even the smallest and rarest of the planets. When a comet is viewed through a telescope of considerable power, there appears a dense nucleus in the centre of the luminous and apparently vaporous matter, of which the external parts are composed; and the opacity of this nucleus varies in different comets. On its first appearance, and again when it recedes, the luminous part of the comet is faint, and does not extend far from the nucleus; but, as it moves on towards the perihelion, the brightness increases, and the luminous matter lengthens into a train, which, in some cases, has extended across a fourth of the entire circumference of the heavens. But, though the general fact of the increased brightness of comets, and length of their tails, with their approach to the sun, and the consequent inclination of their motion, has been established, the observations have not been uniform or minute enough for proving what proportion the increase of brightness bears to the increase of the velocity, and the diminution of the distance from the sun. No doubt, all the comets of which there are well authenticated accounts, of great brightness and length of tail, have passed near the sun in their perihelion. Thus the comet of 1769, which was not a fifth of the earth's perihelion distance from the sun, had a tail of 60° in length, as seen at Paris; while that of 1759, which was distant more than half the earth's perihelion distance, had a train of only 2° or 3°. The length of the tail varies, however, not only with the time at which it is observed, but with the place of observation—a difference probably depending on the difference of clearness and purity in the air. The tail of the comet of 1759 was 25° long, as measured at Montpelier, in the south of France, and considerably more than that as measured at the Isle of Bourbon, in the Indian ocean. That of 1769 was 60° at Paris, 70° at Boulogne, 90° between Teneriffe and Cadiz, and 97° at Bourbon. Generally speaking, they appear to be brighter and larger when seen at sea than on land, and in the warmer regions than in those nearer the poles. When the superstitious fear of comets, as portending harm to the inhabitants of the earth, had vanished before the light of philosophy, that light was in some danger of giving rise to fear of another sort—fear of physical harm to the earth itself, by the collision of some comet that might cross its path. We have no evidence, however, that such a collision ever did happen, either with the earth or with any other planet; and we have not absolutely correct means of so calculating the place of a comet as to be able to say with certainty that, on a given day, during a given month, or even during a given year, it shall cross the orbit of a planet. The motion of the earth in its orbit is, in round numbers, more than a million and a half of miles in a day; and as Clairault, with all his care, did not come nearer the truth than nineteen days, though the collision of a comet and the earth should be calculated from any known data, the earth might, in fact, be, at the time, far enough from the comet. Indeed, though the fact of the return of two comets be established, namely, Halley's and Encke's, and the return of every one, if not affected by physical causes that lie beyond the limits of our present knowledge, has been rendered exceedingly probable, yet we can observe them for so short a portion of their courses, and these seem so very apt to be altered, that we ought not to speak of them with anything like the certainty with which we speak of the planets. As far as we have been able to examine them, they appear to obey the same laws as the other distinct masses that make up the known part of the system of the universe. Beyond this we know nothing of their nature; and as for their effects, moral or physical, we need give ourselves no trouble about them; for there is not a trace of the existence of such effects upon any authentic record.

Respecting the hypotheses relating to the structure of comets, and particularly to their tail, professor Fischer, of Berlin, has given valuable information in Bode's *Astronomisches Jahrbuch* (Astronomical Year-book), 1823, p. 90. See, also, the French edition of Schubert's Astronomy (Petersburg, 1822, vol. 2, p. 510). To learn their mathematical relations, see *Nouvelles Méthodes pour la Détermination des Orbites des Comètes*, by Legendre (Paris, 1806, 4to); and Olbers' *Neue Methode die Bahn eines Kometen aus eigner Beobachtung zu berechnen* (Weimar, 1797). La Place's *Théorie du Mouvement et de la Figure des Planètes et des Comètes* has become rare; but Biot, in the *Additions* to the third book of his *Astronomy*, p. 185, extracts the part relating to the theory of comets entirely from it.

COMFORT, POINT. See *Point Comfort.*

COMFORTABLE; a very expressive word among the English, and people of English descent. It is also found even in recent French publications, probably carried to Paris by the innumerable English who visit the capital of France. Every nation has not only certain words which cannot be rendered precisely by any terms in other languages, but also certain ideas growing out of its customs, wants, &c., which do not exist with other nations, and which are the real cause of this peculiar significance of particular words. Such a word is *comfortable*, which signifies more than a mere physical feeling of gratification. In fact, it has something of the same indefinable and untranslatable character with the word *home*—a word which expresses a vast deal of feeling, of a faithful and tender attachment. *A comfortable home* is an expression, of which it would be impossible to approach to a translation, in some other languages, for instance, in Italian; as an Italian finds his enjoyment in the open air in his lovely climate, and has little regard for the pleasures of home. Many circumstances may have co-operated to produce, among the English, their love of comfort, and the means for ensuring it which we find in their houses. In fact, the comforts of an English dwelling surpass every thing of the kind among other nations. We would confine our observation to the dwelling, because, as respects the whole manner of living, the degree of enjoyment is certainly much greater in France. It is always highly interesting to study those expressions by which a nation describes its habitual likings or dislikings, because they disclose, at once, the general disposition of the people. Such a one is *comfortable*. The German, in a pleasant state of mind, says he feels *gemüth-*

lich, or, of a person, *er ist ein gemuthlicher mensch*. The American, in praise of a person, says, "He is an enterprising man." An *increasing* and *thriving* community is his ideal. The Frenchman, to express great aversion, says, *Je m'ennuie*. The Italian *dolce far niente* (sweet idling) is very characteristic of the disposition of the nation. Not only nations, but also ages, have their peculiar expressions, which are highly interesting.

COMINES, Philippe de (seigneur d'Argenton), a celebrated historian of his own times, was born, 1445, at the castle of Comines, near Menin, in Flanders, and passed his youth at the court of the dukes of Burgundy, Philip the Good, and Charles the Bold. He enjoyed the confidence of the latter, and contributed essentially to his reconciliation with Louis XI. He conducted other negotiations with equal sagacity, and, in 1472, entered the service of Louis XI., probably on account of the rash and violent character of Charles, and induced by the promises of Louis, who loaded him with marks of favour. After the death of Charles the Bold, Louis took possession of the duchy of Burgundy, sent Comines there, and, soon after, appointed him ambassador to Florence, where, during his year's residence, the conspiracy of the Pazzi broke out and failed. Comines displayed, on this occasion, the greatest activity in the cause of the Medici. He was then sent by Louis to Savoy, for the purpose of seizing the young duke Philibert, and of placing him entirely under the guardianship of the king his uncle. In 1483, Louis XI. died. Under the following reign, Comines did not enjoy the same favour. Under the regency, he was made a member of the council, and took part with the princes in their plots against the mild and wise government of Anne de Beaujeu. He was involved in all the intrigues of the duke of Orleans, and was intimately connected with the old constable Jean de Bourbon. A conspiracy in which he was engaged, having been discovered, he was confined eight months in an iron cage at Loches. He was afterwards tried before the parliament in 1488, and pronounced guilty of having an understanding with several rebels, and of other crimes. By the sentence passed upon him, which seems not to have been executed, he was exiled for ten years to one of his estates, and the fourth part of his fortune was confiscated. Charles VIII. employed him in several negotiations in Italy; but this monarch was too wavering and imprudent; the advice of Comines was little regarded, and he received no reward but reproaches and dissatisfaction. Under Louis XII., he seems not to have taken an active part in affairs. He died at Argenton, 1509. His Memoirs (most complete edition, London, 1747, 4 vols. 4to) are valuable contributions to the history of the time. He relates, in them, the events which occurred during his life, and in most of which he had an active share, with great veracity, in lively, natural language, and displays everywhere a correct judgment, acute observation, and a profound knowledge of men and things. His memory is revived in the romance of "Quintin Durward."

COMITIA, with the Romans; the assemblies of the people, in which the public business was transacted, and measures taken in conformity with the will of the majority. They existed even under the kings. In the time of the republic, they were convoked by the consuls; in their absence, often by the dictator, the tribunes, and, in extraordinary cases, even by the *pontifex maximus*. Their chief objects were, the choice of persons to fill the highest offices, legislation, the making of war and peace, and the punishment of crimes against the state. For the first purpose, they were assembled in the Campus Martius: for the others, in the forum, capitol, or the comitium. The emperors retained these assemblies for the sake of appearance, but used them only as instruments for the accomplishment of their purposes. From the division of the Roman people into centuries, curiæ, and tribes, the comitia were distinguished into the *comitia centuriata*, *curiata*, and *tributa*. The most important were the *comitia centuriata*, in which the people voted by centuries. They could be held only on certain days. Seventeen days before, *per trinundinum*, the people were called together by an edict. On the day of the comitia itself, the presiding magistrate, with an augur, went into a tent before the city, in order to observe the auspices. If the augur declared them unexceptionable, the comitia was held; if not, it was postponed to another day. Before sunrise and after sunset, no business was transacted in the comitia. The presiding magistrate, on his curule chair, opened the assembly by a prayer, which he repeated after the words of the augur. Then the subject of deliberation was communicated to the people, who afterwards separated into tribes and centuries. In earlier times, first the equites, then the centuries of the first class, &c., were called upon to vote. In latter times, lots were cast for the order of voting. The opinion of the century which first voted was usually followed by all the rest. In the earliest times, every century voted verbally; in later times, by tablets. What was concluded, in each century, by the majority, was proclaimed, by the herald, as the vote of this century. The comitia was interrupted if any one in the assembly was attacked by a fit of epilepsy (which was called, for this reason, *morbus comitialis*), or if a tribune of the people pronounced his *veto*, and under some other circumstances.

COMMA. See *Punctuation*.

COMMANDERY, or COMMANDRY, among several orders of knights, denotes a certain district, under the control of a member of the order, who received a part of the income thence arising, for his own use, and accounted for the rest. There are strict and regular commanderies, obtained by merit or in order, and others are, of grace and favour, bestowed by the grand master. There are also commanderies for the religious, in the orders of St Bernard and St Anthony.

COMMELIN, Isaac, born 1598, in Amsterdam, was a historian, among whose works, the history and description of Amsterdam is still much valued. He died in 1676, at Amsterdam.

COMMELIN, Jerome, of Douay, a learned printer in Heidelberg, who died in 1598, was distinguished by his excellent editions of Greek and Latin classics. His emblem is a figure of Truth, and, on many editions, the words *Ex Officina Sanct. Andreana*.

COMMELIN, John and Casper, uncle and nephew; learned botanists in Amsterdam. The former died in 1692, his nephew in 1751.

COMMENCEMENT. In Cambridge, it signifies the day when masters of arts and doctors complete their degrees. In the colleges of the United States, this term denotes the day when the students commence bachelors of arts.

COMMENSURABLE; among geometricians, an appellation given to such quantities or magnitudes as can be measured by one and the same common measure.—*Commensurable numbers*, whether integers or fractions, are such as can be measured or divided by some other number, without any remainder; such are twelve and eighteen, as being measured by six or three.

COMMERCE OF THE WORLD. This embraces the whole subject of the traffic and intercourse of nations, and shows how mutual wants, occasioning the exchange of natural riches for the creations of art, unite savage nations with civilized, and spread

moral and social cultivation over the earth. In former times, commerce subdued the *steppes* of Scythia and the deserts of Libya, and it is now clearing away the primitive forests of America, and draining the waters of Australia. For thousands of years, it has pervaded the interior of the ancient world; for centuries it has had its path on the mighty ocean; and, of late, it has studied how to cut through the isthmus of Darien, and to break through the ice of the poles. In the history of the nations, it is a perpetual Argonautic expedition, and, from the first period of commerce down to our own times, its Colchis has been India. The limits of our work do not allow us to exhibit the progress of commerce in ancient times. For this we refer to Heeren's *Ideen uber Handel und Politik der Alten Welt* (Ideas on the Commerce and Politics of the Ancient World), 1805 (see *Heeren*), and shall merely give a cursory survey of the principal commercial nations of modern times.

I. Europe, since the conquest of Tyre by Alexander, has been in possession of the commerce of the world, and has secured it by its colonial system (see *Colony*), founded by Henry the Navigator (q. v.), by means of which it exercises the monopoly of colonial commodities. By this we understand the productions of the planting, commercial, and mining colonies; those of the last, however, only in part, for the precious metals and stones can hardly be designated by that name. This is also true of the productions of the colonies more strictly agricultural: spices, East India goods of all kinds, dye-woods and cabinet-woods, drugs, cotton, and especially coffee, sugar, rice, tea, &c., are properly understood by this term. The East Indies furnish chiefly cotton, sugar, coffee, rice, fabrics of various kinds, spices, and tea (from China); the West Indies, cocoa, coffee, sugar, and cotton; South America, the precious stones and metals, dye-woods, cabinet-woods, drugs, &c. The consumption of these articles, which was formerly possible only for the rich, has increased immensely since the ocean became the highway for trade with the East Indies and America, in the course of the 15th century, and, more especially, since the British and Dutch assumed the first station among the colonial nations of Europe, in the beginning of the 18th century. Instead of being, as before, mere objects of luxury for the higher ranks, colonial goods became necessary articles even for the lowest classes of Europe; and an entire revolution was produced in the civil and political condition of that portion of the world. Commerce thus acquired an incomparably higher importance, and a more general interest. The class of merchants, which was, by this means, increased in an extraordinary degree, soon formed a body of men, spread over the whole cultivated world, and animated by one purpose—to maintain commerce; and even among belligerent nations, the governments endeavoured in vain utterly to abolish the mutual dealings of merchants. Thus, as the intercourse of nations became more lively, the exchange of ideas was promoted, men's views became enlarged, a cosmopolitan spirit united distant communities, and formed of the nations of Europe, as it were, one great, civilized family. Equal results were produced by the increased importance of the colonial powers (in late times, the two maritime states of Britain and Holland, in particular), arising from the increasing consumption of colonial goods. For them, and, indeed, though in an inferior degree, for the other colonial powers of Europe, the trade in the productions of the colonies was an important source of wealth and power. Their great political importance has exercised an extensive influence on the whole political condition of Europe. Britain, in particular, has become continually more powerful by its extensive trade. It was therefore in the natural course of things, that, when the immense power of France was developed by the revolution, and that country, under Napoleon, strove for predominance on the European continent, the greatest struggle should take place between France and Britain, a consequence of which was the continental system of Napoleon, who declared his purpose to be, to free Europe from the tribute which it was obliged to pay to Britain for the colonial goods which it received from her. Britain, deeming it absolutely essential to her interests to prevent the establishment of a universal monarchy on the continent, spared no exertion to procure the restoration of the former order of things, so that she might have a free intercourse with the continental ports. Without going into the points at issue between the two countries, the fact deserves to be stated, that the continental system called into action many kinds of industry on the continent, and, in this way, has produced important changes in the course of trade, resulting from the great increase of manufactures. If we examine whether it be actually true, as asserted in the time of the continental system, that the great use of colonial goods must necessarily produce poverty, it is easy to prove the contrary, which has been already fully confirmed by experience. New wants gave rise to new energy and new branches of industry, in order to gratify those wants, thus increasing the productiveness of labour, and simultaneously, the prosperity of the nations. But it is objected that money, or the produce of labour, which would otherwise remain in the various countries, is sent away from them in exchange for colonial goods. Very true; but, even if the express purpose of acquisition were not to procure new enjoyments, the object of all trade and all activity is, not to accumulate money, but to augment the sum of happiness. If this object be attained, industry and trade have effected all that they should do. Of course, no account can be reasonably taken of the small number of idle spendthrifts, who, without labouring, consume their capital in gratifying their pleasures. But it was soon perceived, that, in the existing state of Europe, entirely to exclude colonial articles was utterly impossible, though recourse was had to all kinds of substitutes. The enormous duties imposed on the importation of colonial goods, as far as the French power then reached, that is, throughout nearly all the continent of Europe, contributed essentially to render its nation poorer; for these duties had to be paid, while nothing of value could be given in return; from which circumstance originated a most pernicious and immoral smuggling trade. But Napoleon asserted that the British would not allow him to make peace, in which case the whole system would naturally have been changed.—In the 18th century,

*Great Britain** became the first colonial power. It therefore, stands at the head of the commercial nations, who are all more or less tributary to British art and industry. With more than 23,199 merchant vessels, containing 2,460,500 tons, in 1827, it exported, in the year ending Jan. 5, 1827, to the amount of £50,399,356, and from Ireland, to the amount of £967,312; the imports, during the same time, amounted to £36,038,951, and into Ireland, to £1,420,027. Its commerce is, in a great measure, managed by companies. These companies are the Russian, the Levant, the African, the South sea, and

* We can give, in the following pages, only a brief account of the commerce of the different nations, and must refer the reader, for fuller information in regard to the different countries, to the different articles.

Hudson's bay companies, the East India company (q. v.) and the Borneo, Solo, and Banca company (for working the gold and diamond mines of Borneo, pursuing the pearl fisheries at Solo and Banca, and working the tin mines on the last-named island). The chief exports of Great Britain are, to the north of Europe, cotton, woollen, and glass, hardware, pottery, lead, tin, coal, East India and colonial wares, dye-stuffs, salt, and refined sugar. In return, Great Britain receives from the north, corn, flax, hemp, iron, turpentine, tar, tallow, timber, linen, pearl and pot-ashes, cordage and hog's bristles. To Germany, Holland, France, Italy, Spain, and Portugal, it exports cotton and woollen fabrics, cutlery, dried and salt fish, pottery and glass-ware, colonial and East India goods, and all kinds of the finer manufactures. From Germany it imports corn, flax, hemp, linen cloth, and thread, rags, hides, timber, and wine; from Holland, flax, hemp, madder, gin, cheese, butter, rags, and seeds; from France, wine, brandy, lace, cambric, silk, ornaments, and fancy goods and fruit; from Italy, Spain, and Portugal, silk, wool, barilla, sulphur, salt, oil, fruit, wine, brandy, and cork. To Turkey it sends cotton and woollen goods, hardware, colonial and East India goods, lead, tin, iron, clocks, and watches; receiving, in return, coffee, silk, fruits, fine oil, dye-stuffs, carpets, &c. To North America it sends woollen and cotton manufactures, hardware, linen, glass, and other wares; the imports from thence are flour, cotton, rice, tar, pitch, pot and pearl ashes, provisions, ship-timber, &c. The chief imports from South America are cotton, hides, skins, tallow, cochineal, dye-wood, sugar, indigo, cocoa, gums, &c.; and the exports from England are the same as above mentioned. The same exports are likewise sent to the West Indies; and in return, Great Britain receives rum, coffee, tobacco, sugar, ginger, pimento, pepper, indigo, dye-stuffs, drugs, gums, cotton, mahogany, Campeachy wood, &c. To the East Indies, China, and Persia, it sends woollen goods, iron, copper, lead, tin, foreign silver money, gold and silver, in bars, hardware, and a variety of manufactures (amounting, in 1828, to £4,877,125); for which it obtains muslins, calicoes, silks, nankeens, tea, spices, arrack, sugar, coffee, rice, saltpetre, indigo, opium, drugs, gums, quicksilver, precious stones, pearls, &c., amounting, in 1828, to £8,002,786. To the colony of New South Wales, the common English manufactures and colonial goods are exported and exchanged for train-oil, seal-skins, wool, &c.

Among themselves, the three British kingdoms trade in the following commodities. From Scotland, England and Ireland receive corn, cattle, woollen and cotton goods, potash, granite, canvass, and iron manufactures; the Scottish fisheries also furnish an important article of commerce. For these things, Scotland receives the productions of Ireland, and articles of luxury, of all kinds, from England. Ireland buys of England and Scotland, woollen, cotton, and silk goods, East and West India goods, pottery, hardware, and salt; and in exchange, gives its linen, hides, potatoes, and other provisions, &c. The foreign commerce of Ireland is, besides, very extensive. It exports its productions and manufactures to France, Spain, Portugal, the West Indies, and North America, for wine, fruit, sugar, rum, &c. The commercial intercourse between Ireland and the north of Europe is mainly through England, and its trade with the East passes exclusively through the same channel. The chief articles of export from Ireland are linen, potatoes, and other provisions, corn, whiskey, herrings, and salmon.

The foreign possessions, settlements, and colonies of Great Britain, of which it possessed twenty-six prior to the French revolution, and has gained seventeen more by conquest, are Heligoland, Gibraltar, and Malta, with Gozo and the Ionian isles, in Europe; its possessions in India, under the administration of the East India company, and Ceylon, in Asia; the Isle de France, or Mauritius, with the Sechelles and Amirante isles, the Cape of Good Hope, Sierra Leone, Cape Coast, and Annaboa, the islands of Ascension and St Helena, in Africa; Canada, New Brunswick, Nova Scotia, Cape Breton, St John's, or Prince Edward's island, Newfoundland, Hudson's bay, and the bay of Honduras, in North America; Berbice, Essequibo, and Demerara, in South America; Jamaica, Barbadoes, Antigua, St Vincent, St Christopher, Nevis, Montferrat, the Virgin islands, Grenada, Tobago, Dominica, Trinidad, and the Bahamas, in the West Indies; also the Bermudas; in Australia (q. v.), New South Wales, Van Diemen's Land, and the colony on New Zealand, and on Melville's island. From all these places does Britain draw many of her comforts and luxuries. "It is diffieult," says Mr Macculloch, in his Dictionary of Commerce, "for those who have not reflected on the subject, to imagine what a vast deduction would be made, not only from the comforts, but even from the necessaries, of every commercial people, were its intercourse with strangers put an end to. It is not, perhaps, too much to say that in Great Britain we owe to our intercourse with others a full half or more of all that we enjoy. We are not only indebted to it for the cotton and silk manufactures, and for supplies of wine, tea, coffee, sugar, the precious metals, &c.; but we are also indebted to it for most of the fruits and vegetables that we now cultivate. At the same time, too, that foreign commerce supplies us with an immense variety of most important articles, of which we must otherwise have been wholly ignorant; it enables us to employ our industry in the mode in which it is sure to be most productive, and reduces the price of almost every article. We do not misemploy our labour in raising sugar from the beet-root, in cultivating tobacco, or in forcing vines; but we employ ourselves in those departments of manufacturing industry in which our command of coal, of capital, and of improved machinery, give us an advantage; and obtain the articles produced more cheaply by foreigners, in exchange for the surplus produce of those branches in which we have a superiority over them. A commercial nation like England avails herself of all the peculiar facilities of production given by Providence to different countries. To produce claret here is perhaps impossible; and at all events it could not be accomplished, unless at more than a hundred times the expense required for its production in France. We do not, however, deny ourselves the gratification derivable from its use; and to obtain it, we have only to send to France, or to some country indebted to France, some article in the production of which we have an advantage, and we get claret in exchange at the price which it takes to raise it under the most favourable circumstances. One country has peculiar capacities for raising corn, but is at the same time destitute of wine, silk, and tea. Another, again, has peculiar facilities for raising the latter, but it is destitute of the former; and it is impossible to point out a single country which is abundantly supplied with any considerable variety of commodities of domestic growth. *Non omnis fert omnia tellus.* Providence, by giving to each particular nation something which the others want, has evidently intended that they should be mutually dependent upon one another." The following table shows the consumption of articles of foreign and colonial produce in Great Britain, from 1820 to 1831:—

TABLE of the Commerce of Great Britain, (its Importations and Exportations,) with all parts of the World, from 1720 to 1822, inclusive.

Year. (☞ W denotes a year of war: P of peace.	Europe, including Egypt, the Levant, Hanover, Heligoland, Gibraltar, Malta, and the Ionian Isles.		Asia, including India, China, the Isles of Maurice, Timor, New Holland, and of the South Sea.		Africa, including the Barbary States, Morocco, the coast west of Africa, and the Cape of Good Hope.		America, North and South.		Ireland, Isle of Man, Guernsey, Jersey, Alderney, and Sark.		Grand Total of the Commerce of Great Britain.	
	Imports.	Exports.	Imports.	Exports.	Imports.	Exports.	Imports.	Exports.	Imports.	Exports.	Imports.*	Exports.
W 1720	£3,206,063	£5,693,941	£331,441	£83,811	£25,307	£130,350	£1,618,916	£636,386	£308,341	£366,395	£6,090,083	£6,910,899
W 1721	2,992,980	5,853,033	1,020,763	127,509	21,949	126,056	1,382,106	702,216	350,701	392,534	5,768,510	7,201,495
P 1722	3,709,249	6,383,456	764,053	125,477	33,671	186,556	1,499,767	1,046 853	371,342	522,728	6,378,098	8,265,085
P 1723	3,511,892	5,492,944	968,570	115,241	29,877	138,507	1,606,531	1,060,113	388,787	590,088	6,505,676	7,395,918
P 1724	3,969,429	5,717,810	1,165,393	100,585	47,181	216,368	1,822,287	1,064,976	390,286	500,966	7,394,405	7,600,720
P 1725	4,077,192	6,162,183	755,778	93,795	67,514	284,024	1,834,811	1,422,866	351,133	518,967	7,084,708	8,481,832
P 1726	3,645,182	5,899,353	914,122	74,802	36,189	147,704	1,729,929	976,619	352,430	603,187	6,677,865	7,692,840
P 1727	3,537,907	5,672,476	1,125,829	97,808	38,690	138,607	1,776,420	889,955	330,117	476,154	6,798,908	7,275,158
P 1728	4,159,953	6,806,452	869,474	115,784	22,443	187,403	2,175,180	1,076,115	342,233	521,446	7,569,299	8,707,216
P 1729	4,058,822	6,273,682	972,033	138,287	49,355	253,380	2,156,694	1,020,306	303,698	554,101	7,540,620	8,239,923
P 1730	4,029,696	6,278,818	1,059,759	135,484	57,081	260,690	2,320,177	1,302,745	313,286	570,766	7,780,019	8,548,982
P 1731	3,626,847	5,898,396	825,373	159,132	29 339	206,103	2,162,505	930,908	336,317	667,793	6,991,500	7,862,488
P 1732	3,771,980	6,692,128	981,332	159,099	50,423	203,923	1,961,245	1,148,969	322,913	666,371	7,087,914	8,870,792
P 1733	4,103,750	6,969,916	1,106,884	132,435	57,635	128,787	2,341,445	948,887	407,083	658,090	8,016,814	8,838,134
P 1734	4,007,764	6,392,989	767,531	135,204	69,416	129,684	1,827,211	964,956	423,922	676,553	7,095,861	8,299,403
P 1735	4,179,416	7,025,012	1,297,400	186,375	41,663	138,659	2,196,696	1,141,460	444,988	837,217	8,160,184	9,328,841
P 1736	3,643,341	7,219,711	928,881	261,176	53,691	193,153	2,182,269	1,095,711	491,187	813,886	7,307,966	9,702,438
P 1737	3,817,882	7,440,960	915,881	378,089	55,779	234,100	1,787,645	1,206,260	394,519	822 287	7,073,638	10,081,712
P 1738	4,057,533	7,649,073	742,844	169,138	61,911	277,248	2,148,225	1,201,349	426,632	828 717	7,438,960	10,195,543
W 1739	3,597,686	6,449,310	1,278,859	217,395	43,035	219,873	2,446,004	1,186,235	461,430	770.776	7,829,373	8 843 624
W 1740	3,302,694	5,570,334	870,476	281,751	62,787	110,513	1,964,534	1,502,042	473,521	705,366	6,703,778	8,197,788
W 1741	3,921,754	6,382,721	1,130,014	456,928	43,815	132,691	2,377,915	1,780,605	457,833	784,672	7,936,084	9,570,086
W 1742	3,214,260	6,244,687	1,213,878	373,797	35,259	130,385	1,936,895	1,837,234	406,366	869,721	6,866,864	9 574.191
W 1743	3,455,555	7,812,163	906,422	645,547	26,297	219,048	2,134,532	1,665,123	867.810	941,724	7,802,353	11,310 297
W 1744	2,965,936	6,298,390	743.506	476,274	13,889	95,093	1,856,122	1,371,271	440,118	817,141	6,362,971	9.190 621
W 1745	3,316,681	5,969,367	973,705	293,113	11,031	71,399	1,632,677	1,040,940	1,499,284	962,504	7,847,123	9 071 786
W 1746	2,972,008	6,951,572	646,697	893,540	25,301	117,474	1,753,669	1,652,638	577,379	826,933	6,205,687	10.766 838
W 1747	3,549,926	6,651,735	621,733	345,526	1,603	186,400	1,542,545	1,517,187	592,451	781,901	7,116,757	9.775 340
W 1748	4,328,575	7,577,384	1,098,712	306,357	17,640	233,671	2,394,702	1,666,549	519 835	948,739	8,136,408	11.141.201
P 1749	3,927,998	8,740,578	1,124,128	557,086	15,724	201,307	2,199,389	2,037,373	616,788	1,061,642	7,917,804	12 678 758
P 1750	3,579,964	8,720,789	1,104,180	508,654	29,007	160,791	2,377,400	1,922,746	668,413	1,374,252	7,772,039	12 699,080
P 1751	3,718,635	8,201,547	1,096,837	798,077	56,292	214,610	2,343,284	1,964,533	721,406	1,234,072	7,943,436	13,419,498
P 1752	3,268,731	7,728,471	1,068,366	627,688	42,642	236,062	2,490,717	1 922,209	611,258	1,207,944	7,889,369	11,694 912
P 1753	4,032,134	7,596,143	1,007,662	788,374	34,011	275 360	2,927,043	2,360 088	607,524	1,223,567	8,625,029	12,243,604
P 1754	3,671,421	7,542,379	1,186,159	844,274	22,024	235,057	2,518,375	1,932,280	658,330	1,233,233	8,093,472	11.787.828
P 1755	3,872,534	7,026,809	1,246,776	874,579	40,254	173,670	2,853,783	1,872,508	697,271	1,115,951	9,238,276	11,065 243
W 1756	3,603,986	7,382,696	796,472	488,880	39,186	183,532	2,381 839	2,163,185	896,003	1,168,880	8,442,027	11,720,745
W 1757	3,736,746	6,472,044	1,111,908	845,466	30,453	154,498	2,566 243	2,503,802	739,457	1,006.195	9,873,153	12,338 555
W 1758	3,799,705	6,720,335	922,946	922,142	43,932	167,899	2 580 277	2,710,346	1,122,155	969,534	9,074,190	12,618 334
W 1759	3,947,871	7,176,991	973,893	665,445	24,382	228,460	2,620,077	3,480 436	911,385	994,939	9,550,864	14,488 692
W 1760	4,223,541	8,019,276	1,785,679	1,161,670	39,410	345,546	3,199 549	4,331,988	1,095,618	1,220,909	10,683,595	15 781.175
W 1761	4,408,858	9,371,501	840,987	845,797	12,201	325,307	3,437,742	3,205,070	1,047,415	1,698,832	10,292,541	16 038 913
W 1762	3,354,228	7,955,961	972,838	1,067,353	30,540	273,127	3.622 938	3,409,989	1,035 334	1 728,531	9,579,160	14,543 336
P 1763	5,448,032	8,850,825	1,059,335	887,063	18,123	463,818	4,616 275	3,071,572	1,055,232	1,855,237	12,568,927	15 578.943
P 1764	4,918,226	10,019,299	1,182,844	1,165,690	35,738	464,878	3,801,106	3,617,966	909,415	1,900,034	11,250,660	17 446 306
P 1765	4,810,842	8,139,834	1,435,589	914,278	51,692	469,034	3,641,568	3,393,617	1,191,884	2,086,601	11,812,144	15.763.867
P 1766	4,410,423	7,620,468	1,975,981	783,961	52,417	496,739	3.818,050	3,501,567	1,288,566	2.225.013	12,456,764	15,188 668
P 1767	5,096,774	6,959,454	1,981,173	1,272,654	55,981	558,062	4,122 566	3,380,435	1,267,069	2 211 032	13,097 153	15.090.001
P 1768	4,875,423	7,755,438	1,507,963	1,156,082	67,249	612, 392	4 561,331	3,054,700	1,542,896	2,679.011	13,115,909	16 620.132
P 1769	4,928,739	6,808,516	1,963,233	1,205,388	58,955	605,180	4 207,874	3,261,291	1,444,769	2.449.957	13,134,090	15 001 282
P 1770	4,815,467	7,321,676	1,941,627	1,084,030	68,449	571.003	4,655,196	3,678,719	1,429,321	2.624.232	13,430,298	15,594,571
P 1771	5,428,344	7,969,119	1,833,139	1,184,354	97,486	702,538	4,436,846	5,741,003	1,613,505	2,475,069	14,208,324	19 018 480
P 1772	4,969,292	8,155,399	2,473,192	941,361	92,338	866,394	4,893,165	4,893,959	1,434,437	2 233,148	14,508 715	17,720 168
P 1773	4,031,050	7,134,948	1,933,096	845,707	68,424	662,112	4,398,321	3,771.219	1,440,433	2,307 941	12,522,643	16,375.430
P 1774	5,597,180	8,266,147	1,386,981	546,213	56,503	846,525	5,112,846	4,469,782	1,658,524	2 445,674	14,477.876	17,288,486
W 1775	5,275,002	9,253,168	1,091,845	1,040,642	67,328	786,168	5,775,866	2,598,170	1,670,053	2 537 332	14,815.855	16,326 363
W 1776	5,325,079	8,274,594	1,468,077	726,398	99,674	470,779	3,577,851	2,510,564	1,693,745	2 530,189	12,439,429	14.755 703
W 1777	5,816,298	6,801,013	1,834,221	785,825	62,740	239,218	2,975,252	2,971,347	1,710,487	2,284.546	12,643 834	13,491.030
W 1778	4,338,048	6,553,230	1,526,130	1,199,827	81,952	154,086	3,213,849	2,225,507	1,545,562	1 895,595	10,975,532	12 253 895
W 1779	4,338,782	5,956,459	716,323	703,191	33,960	159,218	3,005,325	2 377,643	1,642,593	1.718 019	11,537,012	13,338 575
W 1780	5,095,272	5,191,641	970,726	1,116,341	21,689	195,907	2,780,435	3,545,454	1,893,616	2,320,984	10.812,240	12,648,616
W 1781	4,928,290	4,710,061	2,526,339	595,131	36,386	312,622	2,110,511	2 445,934	1,741,847	2,187,076	12.723,613	11,342,296
W 1782	4,460,238	5,697,826	626,319	1,467,844	68,475	351,735	2,867,159	2 469.592	1,591,152	2 034.898	10,341,328	12,535,390
W 1783	5,920,193	5,674,102	1,301,495	701,473	47,860	787,563	3,241,062	3,663,890	1,697,573	2,530,531	13,122,235	15,468,287
P 1784	5,716,848	6,239,652	2,296,652	730,558	119,129	523,985	4,470,489	5,840,935	1,828,519	1,773 185	15,272,877	15,734,062
P 1785	5,817,414	7,566,421	2,703,940	1,153,532	48,535	567,196	5,517,400	4 235,692	2,069,259	2,294,784	16,279,399	16,117,649
P 1786	5,553,533	7,144,162	3,156,687	2,242,038	117,683	688,738	4,601,174	3.774,834	2,222,630	2,117,818	15,786,072	16,305,866
P 1787	6,799,609	7,245,887	3,430,568	1,551,209	117,818	727,634	4,991,468	4,674,819	2,232,808	2,457,810	17,804,024	16,869,789
P 1788	6,436,036	8,125,815	3,453,897	1,430,633	90,069	735,447	5,676,380	4,576,149	2,245,428	2.535,366	18,027,170	17,472,248
P 1789	6,307,247	9,164,734	3,350,148	1,957,177	102,513	669,713	5,445,305	5,194,955	2,483,225	2,479.134	17,821,202	19,340,548
P 1790	7,663,117	8,247,206	3,149 770	2,356,320	71,800	929,203	5,513,413	6,297,610	2,642,939	2,387,317	19,130,886	20,120,121
P 1791	7,959,434	9,294,329	3,698,713	2,272,066	79,784	856,082	5,297,455	7,825,546	2,550,297	2,597,777	19,669,782	22,731,995
P 1792	8,399,050	10,311,819	2,671,517	2,437,887	82,912	1,367,919	5,758,055	8,420,151	2,708,927	2,502,524	19,659,358	24,985,200
W 1793	6,843,232	7,778,477	3,499,023	2,721,793	120,372	884,587	5,814,909	7,135,504	2,388,123	2,127,674	19,256,717	20,390,180
W 1794	7,303,838	11,775,299	4,458,475	2,924,329	48,865	749,823	5,921,277	8,517,377	2,856,365	2,669,326	22,288,894	26,748 083
W 1795	6,667,156	12,456,449	5,769,795	2,382,033	65,097	428,731	6,149,734	8,301 313	2,779,101	2,838,494	22,736,689	27,270,553
W 1796	8,876,905	10,773,208	3,372,689	2,377,376	120,397	613,533	7,128,437	11,133,161	3,025,169	3,128,276	23,187,319	28,026,068
W 1797	6,174,099	10,772,817	3,942,384	2,288,415	54,357	887,128	6,775,668	9 711,206	3,311,941	2,655.539	21,013,956	26,315,713
W 1798	7,831,423	11,544,486	7,626,930	1,145,736	69,761*	1,291,062	8,580,077	13,097,215	2,912,522	3,210,590	27,857,889	30,290,029
W 1799	9,134,464	10,037,637	4,284,805	2,436,383	112,789	1,621,625	9,540,559	15 144.411	3,011,021	4.399.568	26,837,432	33,640,357
W 1800	10,428,913	17,729,414	4,942,275	2,860,397	96,563	1,098,832	11,616,808	12,427.692	2,587,942	4,002,762	30,570.605	38,120,120
W 1801	9,509,146	16,980,647	5,424,441	2,946,257	138,660	1,123,626	14,175,000	13.509.968	2,734.723	3.225,861	32,795,557	37,786,823
P 1802	9,158,185	22,666,579	5,794,906	2,929,816	168,863	1,161,179	12,480,873	10 880.834	3,314,277	3,771 956	31,442,318	41,411,966
W 1803	8,872,803	15,339,610	6,349,294	2,733,013	94,307	818.632	8,729,219	8,928,257	2,995,040	3,616,646	27,992,464	31,438,495
W 1804	8,652,054	15,747,647	5,214,842	1,766,268	163,819	1,173,406	10,057,117	12,049 013	2,827,007	3,712,536	29,301,490	34,451,367
W 1805	10,098,619	15,465,389	6,072,313	1,669,214	106,845	990,640	9,516,031	12 163,702	3,113,548	4,018,479	30,344,828	34,308,545
W 1806	8,19 , 226	12,216,386	3,735,396	1,936,954	115,947	1,433,151	12,371,833	16,093,566	3,352,906	3,844,836	28,835,907	36 527.184
W 1807	7,373,510	12,680,590	3,401,700	1,881,437	122,038	797,7 8	12,408,461	14,887,389	3,606,416	4,306,506	28 854,658	34,566,571
W 1808	4,210,671	11,280,490	5,853,460	1,933,223	143,276	532,840	13,279,020	15,875 527	4,072,284	4,930,663	29,629,353	34,554,267
W 1809	9,550,638	23,720,530	3,366,343	1,647,627	184,650	705,977	15,677,555	19 292,529	3,693,169	4,919,870	33,772,409	50,286 900
W 1810	12,476,137	19,605,963	4,709,768	1,717,118	257,386	484,082	18,719,014	20,418,084	3,702,118	3,643,259	41,136,135	45,869.859
W 1811	4,337,529	14,968,946	4,106,299	1,664,522	188,558	316,704	15,398,154	10,511,259	3,529,163	4,949,995	28,626,580	32,409,671
W 1812	6,165,072	20,987,391	5,602,358	1,779,212	171,820	444,357	11,972,577	14,436,913	3,819,152	5,591,243	28,595,426	43,243,173
W 1814	9,842,154	35,270,495	6,304,096	1,699,125	269,130	422,057	15,062,022	14 717.537	4,031,003	4,512,330	36,559.788	56,624,229
W 1815	8,260,886	28,931,081	6,042,292	2,093,464	325,045	392,956	14,637,475	25,737,285	4,265,193	3,826,110	35,989,650	60,981,063
P 1816	4,862,251	27,492,475	8,312,591	2,204,978	240,018	380,473	12,400,461	17,899,508	3,826,824	3,280,848	30,105,678	51 260.467
P 1817	7,996,923	26,518,740	7,687,328	2,794,634	347,855	505,745	13,394,802	19,417 084	4,191.293	3,884,109	33,965,232	53.124 202
P 1818	12,819,280	27,352,016	7,342,800	3,195,826	295,089	478,941	14,795,653	21,515,571	4,437,052	4,342,553	40,135,952	56,857,927
P 1819	7,993,631	25,457,970	7,544,462	2,421,764	253,973	425,015	13,343,712	14,264,390	4,085,972	4,365,019	33,625 740	46 935 105
P 1820	8,251,511	29,678,369	7,567,678	3,390,897	174,414	566,110	14,830,305	14,398 767	5,136,884	3,693,962	36,514,564	51,733,113
P 1821	7,594,268	27,316,643	6,256,210	4,427,331	298,995	684,256	14,935,035	17,999 527	6,172,686	4,650,309	35,797,617	55,083 522
P 1822	8,918,642	29,293,488	5,142,993	4,100,693	274,744	682,046	14,600,635	18,472,793	5,021,540	4,514,155	34,305,985	56,963,134

* The Total Imports include the produce of the Whale Fisheries at Greenland and in the South Sea, and Prizes of War and Merchandise sold for custom-house duty.

TABLE

OF THE

CONSUMPTION IN GREAT BRITAIN OF VARIOUS ARTICLES OF FOREIGN AND COLONIAL PRODUCE,

from 1821 *to* 1831, *inclusive.**

Articles.	Number, Weight, or Measure.	1821.	1822.	1823	1824.	1825.	1826.	1827.	1828.	1829.	1830.	1831.
Almonds	Cwts.	2,434	3,045	2,257	4,079	3,050	2,778	3,409	3,985	3,250	2,837	3,386
Anchovies	Lbs.	128,670	102,638	83,209	73,369	111,370	64,366	110,385	110,079	126,325	171,766	94,289
Annatto	Lbs.	88,092	68,532	80,388	135,698	125,670	107,793	187,469	149,516	100,081	128,352	157,153
Apples	Bushels	81,327	45,951	30,926	67,691	69,347	46,756	28,779	45,576	33,265	21,217	53,554
Arrow Root	Lbs.	326,833	340,147	445,888	383,324	300,489	358,007	317,830	391,118	479,047	510,587	329,036
Ashes	Cwts.	159,152	170,710	242,045	277,465	268,728	203,105	127,166	148,808	143,657	215,777	192,046
Barilla	Cwts.	241,310	204,205	754,518	120,475	134,161	224,579	239,722	211,864	236,563	276,819	252,487
Bark	Cwts.	422,649	622,375	1,076,631	964,829	1,012,065	550,542	807,190	809,150	1,007,938	997,665	964,379
Bear Skins	Number	7,341	4,932	3,874	1,034	788	577	2,211	1,701	884	951	1,614
Beaver Skins	Number	108,039	97,991	5,295	72,128	72,420	70,002	77,054	68,984	68,655	73,281	65,699
Bees' Wax	Cwts.	4,626	3,845	4,097	3,504	3,767	3,562	4,434	4,633	6,568	6,952	10,096
Boracic acid	Lbs.	101,670	69,780	140,623	.....	11,649	3	30,983	149,702	154,486	316,932	310,166
Borax	Lbs.	96,000	85,130	99,304	131,600	107,799	107,323	213,359	174,987	136,855	121,088	196,766
Boxwood	Tons	225	280	175	337	446	255	438	409	319	382	447
Brimstone	Cwts.	124,633	151,657	153,841	165,871	268,433	233,093	207,462	289,974	314,182	264,436	296,095
Bristles	Lbs.	1,360,382	1,789,144	1,692,337	1,629,204	1,777,072	1,421,760	1,783,820	1,888,807	1,695,083	1,854,523	1,819,798
Cassia Lignea	Lbs.	31,721	33,581	32,622	42,797	49,046	43,182	42,984	55,787	62,252	65,705	61,162
Castor Oil	Lbs.	151,047	162,323	169,572	207,997	285,959	453,072	117,764	255,481	293,029	334,497	327,940
Cat Skins	Number	30,841	28,246	36,189	50,003	26,897	16,563	20,658	21,478	22,449	21,234	28,170
Cedar	Tons	221	610	1,242	2,018	1,858	1,874	2,166	1,914	1,562	439	1,017
Chestnuts	Bushels	15,720	8,370	6,442	9,687	19,747	15,683	16,714	18,380	22,592	14,627	25,626
Cinnamon	Lbs.	12,002	14,507	14,225	13,767	14,098	14,155	14,451	15,696	29,720	.....	23,172
Cloves	Lbs.	32,933	49,765	57,780	60,323	45,261	52,701	85,990	61,216	48,638	60,111	83,885
Cocoa	Lbs.	283,735	267,495	286,657	318,941	347,251	344,776	385,793	354,407	393,847	425,382	502,806
Cochineal	Lbs.	79,121	76,982	77,388	116,437	126,875	94,426	171,325	147,819	127,954	182,217	134,222
Coffee	Lbs.	7,593,001	7,669,351	8,454,920	8,262,943	11,082,970	13,203,323	15,566,376	17,127,633	19,476,180	22,691,522	22,740,627
Cony Skins	Number	428,277	558,291	581,556	429,714	635,797	233,648	197,657	292,762	302,617	377,099	906,776
Cork Wood	Cwts.	39,146	39,586	39,974	43,113	48,348	42,425	51,129	48,794	45,636	38,110	43,274
Cotton Wool	Lbs.	137,401,549	143,428,127	186,311,070	141,038,743	202,546,869	162,886,012	249,804,396	208,987,744	204,097,037	269,616,640	273,249,653
Currants	Cwts.	95,142	96,553	95,050	107,630	105,526	110,425	119,670	118,400	114,077	118,158	149,018
Deer Skins	Number	50,505	41,825	41,736	68,839	60,283	106,921	51,922	23,932	36,314	27,649	31,079
Eggs	Number	40,544,648	50,644,025	49,878,847	51,829,756	64,503,790	62,542,541	66,429,330	65,843,843	63,494,037	52,938,408	58,464,690
Elephant's Teeth	Cwts.	2,772	2,272	2,569	3,564	3,821	2,573	3,258	3,531	3,605	3,628	3,368
Ermine Skins	Number	32,055	22,890	31,657	44,849	13,228	7,176	38,037	22,473	36,137	2,038	4,482
Figs	Cwts.	12,347	13,499	15,027	18,424	17,010	18,961	17,625	21,133	19,703	19,397	20,578
Fitch Skins	Number	106,650	142,728	204,917	251,033	335,478	247,147	291,845	335,925	278,846	246,753	238,127
Flax and Tow	Cwts.	491,582	607,540	553,599	739,651	1,018,837	697,488	896,889	882,289	909,709	955,112	918,883
Fox Skins	Number	32,896	24,081	14,553	2,625	1,530	2,438	2,400	2,191	1,700	7,706	10,080
Ginger	Cwts.	4,172	5,930	6,079	7,002	9,516	13,405	12,383	7,374	5,947	6,284	4,816
Grapes	Value	£4,037	£4,126	£4,944	£6,257	£8,283	£9,046	£9,881	£10,015	£9,095	£8,162	£11,336
Hats, bast, straw, chip, or horse hair	Number	76,248	55,345	57,414	40,828	26,565	12,868	19,512	6,927	8,531	6,238	4,566
Hats, straw	Number	120,068	117,020	121,651	195,568	247,447	204,974	255,640	274,906	234,254	168,525	83,947
Hemp	Cwts.	341,547	507,577	632,904	588,917	644,054	509,059	508,545	460,544	422,122	400,959	504,308
Horns	Cwts.	7,816	10,187	10,482	14,144	13,510	8,879	6,976	10,839	10,782	12,047	16,697
Indigo	Lbs.	2,059,495	2,091,729	2,483,495	2,468,911	2,386,724	1,901,696	2,396,490	3,064,915	2,113,830	2,676,945	2,490,134
Kid Skins	Number	633,617	889,590	946,084	966,120	1,164,720	851,045	1,103,837	904,527	698,604	1,086,209	1,108,307
Lac Dye	Lbs.	317,724	349,367	414,935	481,847	368,465	395,609	456,637	430,665	462,988	578,061	454,779
Lemons and Oranges	Number of Chests.	.....	.....	.....	.....	260,155	296,566	292,941	268,542	244,939	258,439	299,240
Mace	Lbs.	11,572	13,498	14,319	16,879	14,852	15,600	16,760	16,094	14,254	12,600	18,894
Madder roots	Cwts.	44,309	48,584	40,500	69,285	36,830	40,376	49,777	67,243	39,805	36,886	53,862
Mahogany	Tons	14,531	15,599	15,232	16,029	14,452	12,979	19,935	18,038	16,546	15,478	12,175
Marten Skins	Number	158,821	113,052	103,714	107,385	119,930	74,154	112,148	146,040	121,741	151,774	145,859
Mink Skins	Number	28,416	32,305	13,072	40,253	37,016	31,997	26,664	53,163	34,109	49,539	56,066
Molasses	Cwts.	57,141	78,367	161,243	239,540	332,451	279,749	412,665	381,761	386,142	337,588	348,626
Musquash Skins	Number	175,275	167,017	94,739	203,591	101,806	254,724	166,609	296,547	491,978	309,457	274,214
Nutmegs	Lbs.	94,589	112,096	117,768	129,702	99,214	101,117	125,529	140,002	113,273	121,260	152,369
Nutria Skins	Number	829,418	750,457	782,537	351,686	53,533	93,609	214,620	702,920	629,170	808,917	426,012
Nuts, small	Bushels	100,031	109,907	56,541	127,767	113,982	138,932	111,953	125,894	112,439	135,643	109,029
Olive Oil	Imp. Galls.	597,602	796,306	679,949	889,429	1,007,225	850,982	1,070,765	1,753,338	1,334,759	2,147,876	1,928,892
Opium	Lbs.	18,080	18,391	20,985	22,752	20,582	28,329	17,322	20,680	23,970	22,668	25,937
Otter Skins	Number	15,583	10,019	10,254	1,541	1,256	1,194	1,591	2,033	857	921	3,484
Palm Oil	Cwts.	98,219	67,539	72,345	74,523	84,983	94,268	98,070	120,599	175,394	179,652	175,452
Pepper	Lbs.	1,256,532	1,446,400	1,368,983	1,447,030	850,087	2,529,027	1,949,931	1,927,718	1,933,641	2,009,154	2,050,082
Pimento	Lbs.	250,689	294,395	293,223	298,412	303,055	330,473	319,667	310,182	339,013	348,525	304,400
Plums, dried	Cwts.	67	101	102	123	160	139	146	66	321	397	597
Prunes	Cwts.	7,235	9,386	11,187	9,161	10,021	7,516	8,218	7,765	6,245	5,483	8,044
Quercitron Bark	Cwts.	20,278	18,054	18,457	28,801	25,761	15,546	14,264	23,815	22,821	27,712	24,512
Quicksilver	Lbs.	136,776	137,889	125,897	153,061	208,444	205,880	199,092	212,530	162,816	196,636	132,310
Rags, and other materials for paper making	Tons	5,232	6,220	8,326	8,966	9,980	6,670	8,103	7,950	8,985	9,267	7,438
Raisins	Cwts.	132,828	122,772	153,024	148,124	146,310	151,663	147,768	153,229	121,737	147,128	162,204
Rice cleaned	Cwts.	63,890	71,808	63,710	89,456	55,693	58,667	69,478	80,137	116,854	153,652	140,100
Rice in Husk	Cwts.	872	281	209	.....	.....	.....	.....	.....	.....	.....	.....
	Bushels	.....	.....	13,552	86,759	105,306	109,628	177,231	255,682	222,472	189,249	189,398
Rosewood	Tons	296	299	276	460	544	536	727	803	865	1,049	848
Safflower	Cwts.	1,860	3,073	4,137	5,699	4,517	2,338	3,712	5,649	4,371	3,284	2,300
Sago	Cwts.	1,425	1,198	1,823	1,900	2,153	2,565	4,153	3,125	4,026	3,385	3,423
Saltpetre	Cwts.	52,496	89,946	141,632	135,606	112,443	122,063	147,537	171,770	155,095	143,057	155,499
Seal Skins	Number	555,533	380,891	267,034	322,855	305,844	356,686	457,825	289,662	262,446	424,518	528,206
Shumac	Cwts.	103,323	57,245	96,656	118,550	98,909	58,538	76,646	100,344	78,874	107,453	127,822
Spirits, Foreign and British	Imp. Galls.	13,160,288	13,177,005	13,629,706	19,302,544	22,453,614	24,085,949	24,346,187	28,095,176	27,434,104	27,726,859	26,758,326
Sugar	Cwts.	3,056,882	2,989,057	3,228,991	3,367,424	3,079,848	3,573,990	3,340,927	3,601,419	3,539,821	3,722,044	3,787,391
Tea	Lbs.	22,496,571	23,559,155	23,762,470	23,784,838	24,830,015	25,238,067	26,043,223	26,790,481	29,495,214	30,255,299	30,643,348
Tallow	Cwts.	616,160	728,620	764,281	791,593	1,113,747	963,016	191,798	1,062,624	1,024,994	1,139,460	918,733
Tobacco	Lbs.	15,828,950	16,292,446	17,187,106	16,917,067	18,804,699	17,736,103	18,745,827	18,554,391	18,885,765	19,293,501	19,533,841
Turpentine	Cwts.	162,562	203,047	283,139	329,870	231,060	189,432	304,103	312,734	277,510	266,276	301,199
Walnuts	Bushels	8,889	6,444	10,443	9,129	15,890	21,280	23,654	24,937	13,002	15,777	24,347
Whale Oil and Spermaceti	Tuns	26,921	22,077	28,698	22,443	16,771	21,568	26,863	22,473	20,497	17,308	23,027
Wine	Imp. Galls.	4,686,885	4,606,999	4,845,060	5,030,091	8,009,542	6,058,443	6,826,361	7,162,377	6,217,652	6,434,445	6,212,264
Wool	Lbs.	15,898,353	16,256,924	18,787,329	23,995,458	41,101,636	17,868,551	27,943,244	31,031,377	22,614,550	31,522,859	29,669,908

* Some of the articles given in this Table, such as apples, eggs, plums, &c., being a home as well as foreign produce, the reader can have no notion of their real consumption in Great Britain from the numbers specified, but merely of the extent of their importation from abroad. With regard, however, to articles purely foreign, such as almonds, castor-oil, &c., the case is different, as the numbers specified indicate the real extent of their consumption.

The most important commercial cities of England, besides London, are Liverpool, Bristol, and Hull; the most important manufacturing towns are, Manchester, Birmingham, Leeds, Nottingham, Halifax, Rochdale, &c. In Scotland, the principal commercial places are Glasgow, Greenock, Leith, Dundee, and Aberdeen. The foreign trade of Glasgow and Greenock extends to the West Indies, the United States, the British American colonies, Brazil, and the whole continent of Europe. The foreign trade of Leith, Dundee, and Aberdeen, extends to the West Indies, America, the Mediterranean and the Baltic. The greatest commercial cities of Ireland are Dublin, Cork, Wexford, Waterford, and Belfast.

Germany. On account of its navigable rivers, the commerce of this country is considerable. The chief articles of export are linen, linen-yarn, raw wool, rags, quicksilver, corn, timber, flax, hemp, wax, lard, salt, wine, and metals. Its imports are woollens, cottons, and silks, hardware, watches, tanned leather, leather goods, tea, cocoa, dye-woods, hides, colonial and East India goods. The principal ports of Germany are Hamburg, Lubeck, Bremen, Trieste, and Dantzic. In the interior, its chief commercial cities are Vienna, Magdeburg, Leipsic, Frankfort on the Maine, Frankfort on the Oder, Augsburg, Berlin, Breslau, Cologne, Nuremberg, Brunswick, Mentz, Botzen, and Prague. Hamburg (q. v.), in particular, is the channel through which flows, for the most part, the extensive trade between Great Britain and the German states. By means of the rivers running into the Elbe, the navigation of which has lately become free, the numerous and valuable productions of Upper and Lower Saxony, of Austria, and Bohemia, go to Hamburg. By the Havel, the Spree, and the Oder, its commercial operations are extended to Brandenburg, Silesia, Moravia, and Poland. The business of Hamburg consists, in part, of the consignments of foreign merchants, and, to a great extent, of the purchase and sale of domestic and foreign goods. Its money transactions are very considerable. Bremen has important articles of export in the products of Westphalia and Lower Saxony, which it sends to England, Spain, and Portugal; and with America it has more intercourse than any other seaport of Germany. The trade in linens, which foreign countries carry on with Germany, passes wholly through the hands of the Hamburg and Bremen merchants, to whom all foreign orders are directed. The importation of tobacco from America into Germany is almost wholly through Bremen. Leipsic, the centre of European trade with the interior of Germany, and the place of deposit for foreign and Saxon goods, has, besides other mercantile privileges, three fairs, at Easter, Michaelmas, and new year, to which merchants resort from all parts of Europe, and from Asia, and each of which lasts three weeks: there is, besides, at this place, a considerable market for Saxon wool. The chief articles of traffic are Bohemian, Silesian, and Saxon linen; leather hides, wax, and wool, from Poland; woollen goods and pigments, from Prussia; silks, velvets, and corals, from Italy; leather, various manufactures, and dye-stuffs, from Austria and Hungary; laces, silk goods of all kinds, ribbons, porcelain, watches, bronze, and other manufactures, including fancy articles, from France; leather, hemp, and flax, from Russia; colonial commodities and manufactures, from England and Holland; and literary productions from all Europe. There is, also, in Leipsic, an important horse market. Augsburg, by means of its agents and bankers, is the medium of mercantile communication between Germany and the south of Europe. The exchange business of Vienna is commonly transacted by drafts on Augsburg. It also derives considerable advantage from the forwarding of goods, to and from Italy. Frankfort on the Maine, a place of great commercial activity, especially at the time of its two great fairs, in the spring and autumn, has, besides, a very important business, owing to the opulence of its old and new banking houses. It was the central point of all the Rothschilds. In Brunswick, considerable business is transacted in its natural productions, and manufactured articles, as well as in foreign goods. Its two great yearly fairs rank immediately after those of Leipsic and Frankfort. Great quantities of raw thread are sent thither by the Dutch merchants, and the strong beer, called *mum*, is exported to various parts of the world.

Austria is entirely separated from Germany by its system of imposts, and its commercial regulations. Its trade is mostly carried on by land, or on the rivers. Vienna, the store-house of the inland trade of all Austria, has quite an extensive commerce with Britain, the Netherlands, and France, and important dealings with Italy, Hungary, Poland, and Turkey. By the way of Vienna, Germany receives great quantities of raw cotton from Turkey. The commerce of Trieste, in the Littorale, consists chiefly in the exportation of German productions, and of colonial goods, which go from thence to the Levant, and the coasts of the Black sea. Trieste may be regarded as the depot of the productions of the Levant. It is, also, actively engaged in the importation of British wares, and of the produce of the fisheries of Newfoundland. Except this city, the commerce of Austria is confined to Venice and Fiume. The most considerable places of inland trade in the monarchy, besides Vienna, are Lemberg, Prague, Brunn, Brody, Botzen, Pest, and Cronstadt. The allowed imports consist mainly of raw produce, cotton and wool, silk, rice, oil, spices, colonial articles, leather, cattle, &c. The articles of export are woollen cloths, linens, cordage, mineral productions, grain, and glass. Great profit is derived from the transportation of goods, especially of those of the Levant. In Bohemia, far the greater portion of the trade is in the hands of the Jews, who are numerous in the country. The trade is chiefly in exports—linens, woollens, silks, dye-wood, leather, and glass. The glass is superior in polish and cheapness to that of other countries, and the exportation of it is very considerable. It is thought that the goods exported to Spain, Russia, the Levant, and America, amount to 2,500,000 gilders, annually. The countries with which Bohemia has the most commercial intercourse are Austria, Holland, Spain, Portugal, Italy, and Turkey. The exports are rated at above a million pounds, and the imports (colonial goods, articles of luxury, &c.) at something less. Prague is the first commercial city of the country, Reichenberg, the second.

Prussia has likewise, by its system of prohibition, been separated from Germany with respect to free commercial intercourse, especially since 1818. The commerce of this monarchy is promoted by the Baltic, by many navigable rivers, and by canals. The commerce in domestic productions is more important than the transportation and commission trade, which flourishes mainly in Cologne, Magdeburg, Stettin, Minden, Dantzic, Konigsberg, Breslau, &c. The exports by sea are grain, wax, tallow, wool, linseed, flax, hemp, wood, linen, yarn, woollen, and cotton goods, fine works of art, including articles made of amber. Of the different commercial places, Frankfort on the Oder has three considerable fairs. Magdeburg sends corn, linen, cotton goods, cloths, leather, salt and copper to Hamburg, and to the fairs of Leipsic and Brunswick. It has, besides, a transit trade in colonial goods, wine, grain, &c. Wheat is exported from Dantzic, which possesses the largest

granary in Europe; from Elbingen, Stettin, Konigsberg, Anclam, and Berlin, timber; staves and ashes from Dantzic, Memel, and Stettin; hemp, flax, and linseed, tallow, wax, and hog's bristles from Memel and Konigsberg. Tilsit carries on a brisk trade in corn, linseed, hemp, and flax. The exports of Brunsberg are woollen yarn, corn, and flax. Colberg exports corn, and the other produce of Poland. The trade of Stralsund, likewise, consists chiefly in the exportation of corn. Of all the articles of Prussian commerce, the Silesian linen holds the first rank, and for the manufacturing of it, the Silesian towns Hirschberg, Landshut, Schmiedeberg, Friedland, Waldenburg, Schweidnitz, and the Prussian section of Upper Lusatia, are celebrated. This linen is particularly in demand among the Hamburg, British, Dutch, Italian, and South American merchants. The imports which have the readiest sale in Prussia are colonial goods, dye-wood, salt, Buenos Ayres' hides, indigo, groceries, wine, silk, cotton goods, hardware, &c.*

Hanover is not distinguished for its mercantile activity. The exports consist of horses, horned cattle, lead, wax, linen, leather, salt, oats, barley, timber, boards, and the ferruginous copper of the Hartz mountains. The linens are ordinary; the table-cloths and Osnabruck damask are inferior in quality to those of Prussia and Friesland. The surplus of the domestic consumption is exported to South America through the medium of the Hanseatic cities. The principal imports are British manufactures, especially woollen cloths and calicoes, colonial goods, Prussian and Friesland linen, fine French cloths, silks, jewelry, and French wines, with all kinds of small articles of luxury, which the Hanoverian merchant brings with him from the fairs of Brunswick, Leipsic, and Frankfort on the Maine. The chief commercial towns are Emden, Hanover, and Munden.

The commerce of *Saxony, Bavaria, Wurtemberg, Hesse, &c.*, may be comprised under the general head of German commerce, as there exists no reciprocal system of prohibition. See *Germany, Trade of*; also the separate articles on these countries.

Denmark and Holstein. Although the Danish merchants have formed connexions with all the commercial states of Europe, and play an important part in the commerce both of the Mediterranean and the Baltic, their own country possesses but few productions, important as articles of export. Most of what they export are the productions of their East and West India possessions. To the ports of Petersburg, Riga, Stockholm, and Memel, Denmark carries the woollen goods of Iceland and the Faroe islands, salt from Spain, France, and Portugal; and the productions of the East and West Indies and of China. To Germany it sends its horses, its cattle, colonial and West India goods, and woollen stockings, receiving in return linen, wool, brandy, and wine. To Holland it exports rape-seed, fish, &c., in exchange for groceries. To France, Spain, and Portugal it carries horses, fish, and other articles from Russia, in exchange for salt, wine, fruits, sweet oil, brandy, silk, &c. Its trade with Britain consists, mainly, in exchanging timber, &c., for British manufactures. To Iceland it exports rye-meal, rye, barley, brandy, and other spirituous liquors, together with the common articles of consumption; receiving in return fresh, dry, and salt fish, train-oil, tallow, eider down, wool, and woollen stockings. It supplies Greenland with flour, spirituous liquors, &c., in return for train and seal-oil, seal-skins, eider down, and peltry. The largest commercial towns of Denmark are Copenhagen and Elsinore in Zealand, Aalborg in Jutland, Flensborg and Tonningen in Sleswic, Altona and Kiel in Holstein. The West India colonies of Denmark are St Croix, St Thomas, and St John's. On the coast of Coromandel, it possesses Tranquebar; on the coast of Guinea, Christianborg and other small places. It has also small factories on the Nicobar islands. In Europe, it possesses Iceland. The chief commercial companies in Denmark are the Asiatic or East India company, the Iceland company, the maritime insurance company, the African or Danish West India, and the general commercial society. In 1824, there were exported from Denmark 2,022,720 tons of grain, 36,562 tons of flour, &c.

France. The commerce of France extends to every country of the world. The exports are wine, brandy, oil, corn, meal, liqueurs, snuff, silks, woollens, fancy goods of all kinds, watches, porcelain, crystals, carpets, bronze, linen, lace, cambric, tapestry, hemp, flax, fruits, capers, salt, jewelry, paper, &c.; and France receives the raw produce of all countries, but very few manufactured goods. In 1824, the value of all the exports of France was 440,542,000 francs, of which 163,056,000 were in natural products, and 277,486,000 in manufactured goods. In the same year, goods were imported into France to the amount of 189,535,000 francs in 3,387 French vessels, to the amount of 108,397,000 francs in 4,183 foreign vessels, and to the amount of 156,929,000 by land; the whole importation amounted to 454,861,000 francs. The principal ports are Bordeaux, Marseilles, Nantes, Havre de Grace, St Malo, L'Orient, and Dunkirk. The commerce of Marseilles is mostly with the Levant and the West Indies; that of Bordeaux, with Asia, the West Indies, and the north of Europe. Calais and Dunkirk carry on a very lucrative contraband trade with England. Havre de Grace is the seaport of Paris, which has a very extensive indirect trade, and dealings in bills of exchange with foreign countries. Amiens exports great quantities of velvet; Abbeville, Elbeuf, Louvier, and Sedan trade mainly in cloths; Cambrai, Valenciennes, and Alençon, in cambrics and fine laces. Cette, the port of Montpellier, has an extensive trade in Spanish and colonial goods. The commerce of Bayonne is chiefly with Spain. Silks form a principal article of the commerce of Lyons, which is situated in the centre of the roads leading to Switzerland, Spain, Italy, and Germany, and has annually four fairs For Strasburg, its excellent turpentine is an important article of trade. Lille has a direct intercourse, not only with all the commercial states of Europe, but also with the French and Spanish colonies, and with the Levant. The other commercial towns of importance are Rheims, Troyes, Grenoble, Nismes, Angouleme, Cognac, Nantes, Rouen, Rochelle, and Caen. Grenoble supplies France, Italy, Spain, and even Great Britain with fine gloves. Beaucaire has an important fair. The French colonies are Martinique, Guadaloupe, St Lucia, and Mariegalante in the West Indies; Cayenne in South America, Pondicherry, Chandernagore, and some other possessions in the East Indies, with several factories on the western coast of Africa and on both sides of cape Verde.

Italy. Although Italy possesses the most excellent harbours on the Mediterranean and Adriatic seas,

* The extended frontier of Prussia exposes it very much to smuggling. On this account, Prussia has been lately endeavouring to induce some of the smaller states in her neighbourhood to abolish all restrictions on their commercial intercourse with her. Some of the states have acquiesced in this arrangement. These are Bavaria, Wurtemberg, Mecklenburg, the Saxon dukedoms, Hesse-Darmstadt, and Brunswick. Some of these have also allowed Prussia to place her custom-houses on their outward frontier, on condition of her paying them a certain sum as a compensation for the customs which she will thus receive. Some other German states have united together with similar views, and form the confederacy of Central Germany. These states are Hanover, Hesse Cassel, the kingdom of Saxony, and Oldenburg.

and has a geographical situation uncommonly favourable for commerce, its trade, both domestic and foreign, is very limited. The cause is to be sought in the impolitic restrictions, heavy taxes and imposts, to which the commercial cities are subjected in this most fruitful, but, for the most part, badly governed country. The chief articles of export from Italy are corn, olive-oil, wine, brandy, silk, cotton, wool, hemp, flax, velvet, damask, barilla (soda), sulphur, sumach, gall-nuts, madder, velani or valonia, and other dye-stuffs, senna leaves, liquorice juice and root, juniper berries and other drugs, anchovies, almonds, figs, nuts, olives, currants, raisins and other fruits, rags, chip and straw hats, the skins of sheep and kids, and marble. The principal commercial cities are Florence, Genoa, Leghorn, Naples, Venice, and Ancona. Leghorn is the main channel of the trade of Italy with the Levant and the Barbary states, and the central point of the commerce of England in the Mediterranean. A great part of its trade is in the hands of the Jews. Silks, taffeta, satins, brocades, light woollen goods, velvets, &c., are the main articles of export from Florence. These pass through Leghorn, and sell readily in the Levant. Milan and Turin carry on a very extensive trade in their silk, which is celebrated throughout Europe for its admirable fineness and lightness. Ancona has intercourse with the first commercial cities of Europe. Its business is chiefly agency and commission business. Some silk is exported from Nice. The exports of Lucca are olive-oil, silk, damasks, fruit, &c. Much olive-oil is exported from Gallipoli. The trade of Genoa continues considerable. Its exports are velvet, damask (which, next to the Venetian, is the most esteemed in Europe), raw silk, fruit, olive-oil, alum, marble, corals, coarse paper, &c. Venice, once the greatest mart of the world, notwithstanding the disappearance of its ancient splendour, is still an important place for commerce, a great part of the trade of Europe with the Levant being yet in its hands. The Venetian velvets, damasks, mirrors, and manufactured silks, in great quantities, form the most considerable constituents of the foreign trade of Venice. The exports of Naples are olive-oil, wool, silk, tartar, wines, raw and manufactured silk, fruit, sulphur, and staves.

The Islands of the Mediterranean Sea. The exports of Sicily, a country on which nature, with profuse generosity, has lavished in abundance all her gifts (the benefit of which, however, is almost destroyed by the weakness of the government), consist of silk, grain, barilla, sulphur, olive-oil, wine, cantharides, sumach, manna, coral, rags, almonds, figs, raisins, nuts, anchovies, amber, goat, buck and sheep-skins, pomegranates, oranges, lemons, &c., and pine-apples of remarkable size and exquisite flavour. The chief port is Messina; next to this comes Palermo.

The exports of Sardinia are, chiefly, grain of uncommon excellence, tunny-fish, hides, barilla, salt. Cagliari is the most considerable commercial city.

Corsica exports silk, olive-oil, and black, white and red corals. The silk goes mostly to Genoa and Lyons, and the corals are sold at Marseilles, where they are manufactured and polished, to be sent to Africa, to be sold to the Moors and Negroes. The Corsican ports are Ajaccio, Bastia, and Porto Vecchio.

Malta, which is, like Gibraltar, a depot for British and colonial goods that are to be disposed of in the Mediterranean, exports cotton, oranges, and other fruits.

The Ionian islands (Cephalonia, Zante, Corfu, Santa Maura, &c.) export wine, brandy, olive-oil, raisins, currants, citrons, melons, pomegranates, honey, cotton, and salt. The raisins and currants are superior to those of the Morea in quality. The wine is Muscadel.

The commerce of the island of Cyprus is inconsiderable. It exports cotton, wool, silk, wine, salt, turpentine, Turkish leather, &c. Its largest commercial cities are Larnica and Rhodes.

The exports of the island of Candia, which, by its situation, is designed for the mart of the European, Asiatic, and African trade, consist of oil, soap, wax, wine, linseed, raisins, almonds, laudanum, St John's bread (the fruit of the *ceratonia siliqua*), &c.

Belgium and Holland. The chief commercial cities of Belgium are Antwerp, Ghent, and Ostend. Antwerp is the mart of the commerce of the North of Europe. Since the opening of the Scheldt, it has been gradually recovering its mercantile prosperity, The exports of Antwerp consist, principally, of wheat, beans, clover-seed, linen, laces, carpets, tapestry, and all the manufactures of Brussels, Mechlin, Ghent, and Bruges. The articles of export from Ghent are wheat, fine linen, flax, hemp, beans, &c.; those from Ostend are wheat, clover-seed, flax, tallow, hides, and the linen of Ghent and Bruges.—The chief exports of Holland, the commerce of which has revived since 1814, and employs, every year, 4000 vessels of various descriptions, are butter, cheese, linen, cloth, drugs, and paints, fish, wheat, linseed, clover-seed, geneva (gin), dye-stuffs, paper, &c. The principal commercial cities in Holland are Amsterdam, Rotterdam, and Groningen; then follow Liege, Middelburg, and the ports of Briel, Delftshaven, Dort, Enckhuyson, Medenblick, &c. Before the decline of Dutch commerce, Amsterdam was one of the greatest commercial cities of the world, the mart of goods from the East and the West, and from the principal states of Europe. At the time when the Dutch were in exclusive possession of the spiceries of the East, of the silks of the East Indies and China, and of the fine East India cotton goods, they dressed in coarse cloth, and were satisfied with a very frugal mode of living. The fine cloths which they themselves manufactured, they destined wholly for foreign countries, and, for their own use, purchased coarse cloth in England. At that time, they likewise sold the superior butter and cheese which they made, and, for their own use, bought the cheaper sorts from England and Ireland. To the exchange and banking business, of which the channel was Amsterdam, the Dutch were also, in part, indebted for their great prosperity. With Hamburg, Amsterdam is yet the centre of the exchange business between the north and the south of Europe, although, from the time that the credit of the bank of Amsterdam diminished, this branch of business has declined, a great portion of it being transferred to Hamburg and London. The imports are grain, wood, coal, tallow, wax, rags, &c. For the colonial trade of Holland, the possession of Batavia, Amboyna, Banda, Ternate, and Macassar, in the East Indies, is of importance, as are also the commercial settlements on the Coromandel and Malabar coasts, and those at Bantam, Padang, Japan, &c. In Africa, Holland has some forts in Guinea; in America, she possesses Surinam, and the West India islands of Curacoa, St Eustatia and St Martin.

Poland. The exports of Poland consist of corn hemp, flax, lumber, linseed, tallow, and salt. Its commerce is inconsiderable, and is almost wholly in the hands of the Jews. Warsaw and Cracow are the two largest commercial cities. The former has two fairs every year. Cracow has a situation very favourable to commerce, but the principal article of its trade is furnished by the celebrated salt mines of Wieliczka, situated in the neighbourhood. At the fairs of Leipsic and Frankfort on the Oder, Poland is

supplied with manufactures, and all articles of luxury, in exchange for hare-skins and other productions.

Portugal. The Portuguese exports are, chiefly, white and red Port wine, Lisbon and Calcavella wine, salt, oranges, lemons, and other fruit, cork, silk, wool, sweet oil, &c. To England are sent Port wine, Lisbon, Calcavella, Madeira, and Canary wines, salt, oranges, lemons, cork, &c.; in return for which the Portuguese obtain British manufactures and colonial goods, provisions, corn, meal, copper, lead, coal, &c. Their exports to the North of Europe are wine, salt, fruit, &c.; for which they receive hemp, flax, corn, iron, timber, tar, pitch, stock-fish, and Russian and German linen. The chief commercial cities are Lisbon, Oporto, and Setubal, commonly called *St Ubes*. The foreign possessions of Portugal are, the cities of Goa and Diu in the East Indies, together with a part of Timor, the factory of Macao in China, the Azores, Madeira and Puerto Santo in the Atlantic, the cape Verd islands, those of St Thomas, Angola, and some settlements in Guinea and on the western coast of Africa, with Mozambique, Melinda, and other settlements on the eastern coast.

Russia. Russia exports, principally, iron, hemp, flax, cordage of all kinds, tallow, hides, fir and oak timber, boards, planks, laths, spars, pitch and tar, together with all kinds of grain, especially wheat, linen, canvas of various kinds, wax, honey, bristles, suet, soap, isinglass, caviare, leather, train-oil, hempseed, linseed, and tobacco. The chief commercial cities are Tobolsk, Irkutsk and Tomsk, in Siberia; Astracan, Orenburg, and Kasan, in Asiatic Russia; Moscow and Novgorod, in the interior of Russia; Archangel, on the White sea; Libau (though very much decayed) in Courland; Taganrog, Caffa or Theodosia, Odessa, Cherson, Sebastopol and Azoph, on the Black sea and the sea of Azoph; Riga, Pernau, Narva, Revel, Petersburg, Viborg, Fredericshamn, and Arensburg; the places where the fairs are held, at Niznei-Novgorod, Irbit, &c., connecting the caravan trade of the East with the inland trade of European Russia, which is promoted by canals and rivers. By the Black sea and the sea of Azoph, Russia carries on a very lively trade with various Turkish ports; on the Caspian sea, with Persia; by way of Kiachta, with China; and, on the north-west coast of America, it is at present laying the foundation of its trade in the Pacific. Russia has lately sent an expedition from Kodiak northward, to make topographical surveys in the interior of North America, and to establish a commercial intercourse with the natives of this unexplored country. Her colonies in North America are well provided for. Her officers are gaining nautical knowledge in England, and numbers have been sent to the United States of America, where models of nautical architecture and vessels celebrated for sailing have been purchased on Russian account.

Sweden and Norway. The articles exported from the twenty-eight Swedish ports are iron, steel, copper, pitch, tar, fir, alum, and fish. The chief commercial cities are Stockholm, Gottenburg and Gefle. Carlscrona carries on considerable trade in iron, timber, pitch, tar, tallow, potash, linseed, &c., which articles are sent mainly to the French, Spanish, and Italian ports, commonly in exchange for salt. The exports of Gottenburg are fish, iron, steel, and boards. The institutions of Sweden for the promotion of commerce are the bank, the East India company, the West India company, the Levant commercial company, the association of industry, &c. From Norway are exported, fish, oak, and fir timber, deal boards, masts, alum, vitriol, fish, and seal oil, pitch, hides, woollen stockings iron, copper, and tar. The chief commercial cities are Christiania, Bergen, Drontheim, Christiansand, Drammer, and Stavanger.

Switzerland. Switzerland has a considerable foreign trade. Its exports consist, chiefly, of fine linen, silks, velvets, imitations of East India goods and shawls, fine calicoes, clocks, watches, ribbons, wine, cheese, honey, &c. The most important articles of importation are colonial and East India goods, from Holland; salt, grain, wool, and cloths, from Germany; raw cotton, silk, &c., from Italy; manufactures, of various kinds, from England; wine and brandy from France. The principal commercial cities of Switzerland are Bale, Berne, Zurich, Geneva, and Neufchatel.

Spain. For three centuries, with the decrease of the industry of Spain, its trade has been on the decline. This country might have monopolized the commerce of the world, if it had understood and improved its situation. The natural wealth of the soil is, nevertheless, still the prop of its trade. The most important productions are wool, silk, salt, iron, copper, coal, quicksilver, barilla, rice, saltpetre, sugar, almonds, olives, oranges, lemons, figs, wines, brandy, and fruit. In Segovia and Leon, about 1,000,000 arobas (q. v.) of fine wool are annually collected, of which about four-fifths are disposed of to the French, Dutch, and English. The excellent Spanish wines, brandy, fruit, barilla, &c., are profitable articles for the country. From the port of Barcelona, excellent silks, coarse cloths and cotton goods, with wine, brandy, almonds, nuts, and other productions, are exported; in return for which, the same port receives the silks of Lyons, the hosiery of Nismes, various kinds of stuffs and cotton goods, German linen and dried stock-fish from England, amounting to about £675,000. The exports of Valencia consist, principally, of silk, barilla (soda), coarse wool, dried fruits, wine, and brandy. The latter is exported, chiefly, by the Dutch, and carried to Normandy and Bretagne. The English carry to Spain, chiefly, woollen cloth; the French, linen, woollen cloth, cutlery, groceries, &c. From the port of Alicant, the Spaniards export, chiefly, dried fruits, silk, wool, barilla, wine, Castile soap, olives, saffron, a kind of cochineal called *grana*, and salt; of which last, the English and Swedes annually take upwards of 9,000,000 pounds. In Carthagena and Malaga, also, much business is done. From the latter, wines, dried fruit, almonds, sumach, anchovies, olive-oil, &c., are exported. Cadiz has been one of the principal marts in the world, both in ancient and modern times. In 1792, its exports to the two Indies amounted to the sum of 276,000,000 reals, and its imports to upwards of 700,000,000 reals (eight reals make one dollar). Madrid, the royal residence, is likewise an important commercial place and depot. Seville carries on a considerable trade in oil and oranges, which are exported from Cadiz. Almost the whole Spanish coasting trade is in the hands of the French, Dutch, and English. The independence of Spanish America has almost totally annihilated the colonial power of Spain. The situation of Cuba may be considered dubious, like that of the Philippines. See *Philippines* and *South America*.

Turkey. The Turks are, as yet, very far from being a commercial nation, although their commerce with Austria, France, Italy, Great Britain, Holland, &c., by means of the Jews, Armenians, and Greeks living in Turkey, who have the trade of this country almost wholly in their hands, is by no means insignificant. The insurrection of the Greeks did, indeed, at first, interrupt very much the commerce of Austria and other states; and the British were also formidable rivals on the Ionian isles; but Vienna, the centre of the Greek trade, has, nevertheless, retained its connexion with Turkey, while the productions and

the demands of the free Greeks must soon much increase. They offer cotton for linen, silk for cloths, gold for iron. Nature and habit recommend to them intercourse with Austria. On the other hand, the commerce with European Russia, by way of Constantinople to Odessa, was very much restricted by the Porte, subsequently to 1823, by the necessity of relading, to which it subjected the European vessels destined for Odessa, and by other burdensome regulations. This, however, has been changed by the peace concluded with Russia in 1829. Every vessel can, at present, pass the Dardanelles unmolested. This must soon have a great influence upon the Turkish trade also. In the Archipelago, the Greek struggle for freedom has given rise to many dangers to the commerce of neutrals. The chief commercial place is Constantinople, particularly in regard to the trade with Russia. Till within a short period, it distributed the Russian products through the ports of the Mediterranean. The exports of this city, which, under a wise and active government, might become the true mart of the world, are of such little importance, that the great quantities of goods, imported for the use of Turkey, have to be paid for, almost wholly with gold and diamonds. In this port, the English, French, Italians, and Dutch obtain the produce of Poland; the salt, the honey, the wax, the tobacco, and the butter of the Ukraine; the hides, the tallow, the hemp, the canvass, the peltry, and the metals of Russia and Siberia, and, in exchange, give the productions of their own countries. This business is transacted without the Turks having the slightest part in it.

Hungary. Hungary is considered by Austria as a foreign country, and is circled in by a line of custom officers. The trade of Hungary, therefore, is under different regulations from that of the rest of the empire, and is any thing but favoured by the government. Its foreign commerce is, nevertheless, by no means insignificant. The exports are wine, tobacco, gall-nuts, antimony, alum, potash, horned cattle, wool, iron, copper, wheat, rye, and barley. The exports by far exceed the imports. Goods can only be introduced through Austria and Turkey, the government having prohibited every other way that might be selected for the purpose.

II. Asia. The commerce of Asia is mostly inland, carried on chiefly, in Western and Middle Asia, by means of those caravans (called, by a poet, the *fleets of the desert*), in which, sometimes, more than 50,000 merchants and travellers are collected, while the number of camels is far greater. The central point of this trade by caravans is Mecca, which, during the presence of the caravans, offers to the eye of the traveller a more active trade and a greater accumulation of merchandise than any other city in the world. The muslins and other goods of the East Indies, the productions of China, all the spices of the East, the shawls of Cashmere, &c., are transported on the backs of camels to Mecca, from whence they are scattered over, not only the Asiatic, but also the African continent.

The *Arabs*, who were, before the discovery of the passage to the East Indies around the cape of Good Hope, the first commercial people of the world, have now no commerce of consequence. Coffee, aloes, almonds, the balsam of Mecca, spices, and drugs, and their African imports of myrrh, frankincense, and gum-arabic, are their chief articles of export. Yemen, rich in the costly productions of nature, resorts for a market to Mecca. The Arabian gulf and the Red sea connect the commerce of Arabia with that of Africa, especially with that of Egypt and Abyssinia.

From Masnah, the capital of Abyssinia, are exported gold, civet, ivory, rhinoceros' horns, rice, honey, wax, and slaves; and for these the Africans obtain, in Mocha, or Mecca, and Jedda, cotton, cloves, cinnamon, pepper, musk, ginger, cardamom, camphor, copper, lead, iron, tin, steel, turmeric, vermilion, tobacco, gunpowder, sandal-wood, rice, hardware, arms, and a number of other kinds of European manufactures. The exports from Aden, an Arab city, on the straits of Babelmandeb, where many Jews reside for the purpose of trade, are coffee, elephants' tusks, gold, and various kinds of gums; for which it imports chiefly East India and Chinese productions. Muscat, a port in the Arabian province Oman, the key of Arabia and Persia, carries on considerable trade with British India, Sumatra, the Malay islands, the Red sea, and the eastern coast of Africa.

Well adapted as the geographical situation of *Persia* is for commerce, it is pursued, nevertheless, with very little energy, and little enterprise. Its exports consist mostly of horses, silk, pearls, brocades, carpets, cotton goods, shawls, rose-water, wine of Schiras, dates, wool of Caramania, gums, drugs of various kinds, &c. The chief places for Persian trade are the Turkish cities of Bagdad and Bassora. The harbour of Abuschar, or Buschir, on the Persian gulf, is also a mart for Persian and Indian goods. Bagdad, once the centre of a brilliant and extensive commerce, may still be considered as the great mart of the East, though it is by no means what it has been. From Bassora, the productions of Arabia, India, Persia, and the Asiatic islands are sent to Bagdad, where they find a very good market, and from whence they are scattered through the other cities of the Turkish empire. By means of the Arab caravans, Europe supplies Persia with goods of all kinds, and even with the productions of America. On the other hand, it has nothing to give but dates, tobacco, and a very moderate quantity of woollen stuffs, its whole trade consisting in the distribution and sale of the products of other countries. Bassora is, by its situation, the mart of the active East Indian, Persian, and Arabic trade, carried on in the Persian gulf. Its trade with the East Indies is very considerable, it being the channel through which the Ottoman empire is supplied with the groceries of the East, and with the manufactures of the British possessions in the East Indies.

Asiatic Turkey. The principal port of the Levant is Smyrna, a very important depot of the merchandise of the East and West. The articles exported from the Levant are coffee, cotton, wool, silk, madder, camels' and goats' hair, hides, raisins, figs, pearls, rotten-stone, whet-stones, nut-galls, opium, rhubarb, and other drugs. Angora sends to Smyrna, by caravans, considerable quantities of Angora goats' hair, and stuffs made of the same material; for the Angora goats' hair is manufactured into camlet, in the Levant itself, and in Europe, especially in Britain, France, and Holland, some of whose camlet manufacturers keep agents in Angora, through whom they make their purchases. Damascus is the centre of trade in Syria, and does a good deal of business through the caravans, which go from the north of Asia to Mecca, and from Bagdad to Cairo. Aleppo has much commercial intercourse with Constantinople, Bassora, Bagdad Damascus, and Scanderoon, or Alexandretta, to which places caravans go every year, through Aleppo. Its exports are its own silk and cotton goods, the shawls and muslins of the East Indies, the gall-nuts of Curdistan, copper, pistachio-nuts, and drugs. Alexandretta has some trade of importance. Erzerum is the mart of silk and cotton goods, printed linens, groceries, rhubarb, madder, and East Indian zedoary.

The British East Indies, and the Malay Peninsula. For the long period of 4000 years, the products of India, so important in commerce, have remained the same; for all the commodities and treasures of India, mentioned by the ancients, are, to this day, those for which the nations of the other quarters of the world resort thither, viz., rice, indigo, cochineal, and other dye-stuffs, opium, cotton, silk, drugs, cinnamon, cassia, cocoa-nuts, &c. The East India trade is mostly in the hands of the British, under the management of the East India company. Next to the British, the United States are most extensively engaged in the East India trade. Denmark carries on but an inconsiderable trade with the East Indies, and that once carried on by Sweden is now almost annihilated, although, prior to the late great changes in the government of that country, the Swedish East India company was, of all the commercial societies of Europe, the best regulated, and the most successful in its operations, next to the British. The trade of Portugal with the British possessions in the East Indies is of importance; that of Spain, on the other hand, inconsiderable. Calcutta is the most important commercial city of the East Indies. Besides it, Benares, Guzerat, Oude, and Moultan are worthy of note, among the commercial towns of northern India; Madras and Pondicherry, on the eastern coast; Bombay, Surat, and Cochin, on the western; Goa, &c. From Queda, on the peninsula of Malacca, are obtained tin, rice, wax, fish maws, and sharks' fins; at Salengore, Pahang, and Trangano, cloves, nutmegs, pepper, camphor, betel, ivory, gold dust, tortoise shell, tin, &c. Gold dust is exported chiefly from Malacca. Since 1819, the British government in Calcutta, through Sir Thomas Stamford Raffles, has founded, according to his plan, a new commercial town on the fertile, well-wooded island of Sincapore (q. v.), on the south extremity of the peninsula of Malacca, on the straits of this name, which is of extreme importance to the British trade with China, and must destroy the China trade of the Dutch. If Sincapore is made a free port, England will be able to supply from thence all of Further India with the productions of its industry.

China. The trade which China carries on with Europe, British India, the United States of America, Cochin-China and Siam, with Japan and the other Asiatic islands, is very considerable. The British imports into China are partly shipped by the East India company, partly by private merchants. From 1781 to 1791, the company sent thither to the amount of £3,471,521 in goods, and £3,588,264 in bullion; from 1792 to 1809, £16,502,338 worth of goods, and £2,466,946 in bullion. One of the chief articles of import is opium, which, although prohibited, is now used in China in great quantities. The exports which the company made to Britain amounted, from 1793 to 1810, including duties, freights, &c., to £41,203,422, and they were sold for £57,896,274, leaving the company a net profit of £16,692,852. As the British East India company trades more extensively with the Chinese than any other body, we shall subjoin the following official statement of its exports of tea and raw silk from the port of Canton, for each of the following ten years, as given in the appendix to the report of the committee of the house of lords, printed in 1821.

Years.	*Tea, pounds.*	*Silk, pounds.*
1810—11	19,710 737	81,828
1811—12	26,164,221	87,074
1812—13	28,267,413	145,889
1813—14	24,727,436	140,129
1814—15	26,195,144	209,073
1815—16	33,013,387	37,642
1816—17	29,353,973	67,518
1817—18	20,151,597	55,597
1818—19	21,085 8 0	48,007
Average of 1825, 6, 7,	37,090,898	

Since the year 1824-5, the East India company have exported nothing from China except tea. The whole exports of tea to Britain and the North American colonies, in 1828-29, amounted to 29,847,234 lbs. For further details, see *East India Company*, and *Tea Trade.*

Next to the British, the people of the United States have the most trade with China. In the following years, their imports into, and exports of tea from, Canton, were as stated below, the value of the imports being given in dollars, the amount of tea exported being stated in pounds.

Years.	*Imports.*	*Tea exported.*
1815—16	dollars, 2,527,500	7,245,290
1816—17	5,699,600	8,934,100
1817—18	7,076,828	9 622,130
1818—19	10,017,151	10 988,046
Average exports to 1800,		2,735,090
—	of 1824—25,	13,314,449

having increased 387 per cent. in 25 years. The imports of the nations on the continent of Europe into China consist chiefly of gold bullion, for which tea is received; but these imports are small, since most of them obtain their tea from the British and Americans. With Siam, Cambodia, Cochin-China, the Asiatic islands, and Japan, China has a very active intercourse, and, of late, with Russia also, both by land through Kiachta to Irkutsk, &c., and by water. The Dutch, British, and Americans have factories at Canton, the French an agent there or at Macao, the Spaniards an agent at Macao, where the Portuguese have a colony.

From Siam and Tonquin are exported tin, ivory, diamonds, and other precious stones, gold dust, copper, salt, betel, pepper, wax, silk, timber and lackered wares, and the commerce of these two countries is mostly in the hands of the Chinese and Portuguese. The trade of Cochin-China is mostly in the hands of the Chinese. The exports are sugar, silk, gold, betel-nuts, ebony, Japan-wood, buffaloes' horns, dried fish, and fish skins. The Chinese empire is so vast, and the variety of the products of the different provinces so great, that the inland commerce of this world within itself has withdrawn the attention of the people from the foreign trade, which oppressive regulations have injured. Formerly, however, Chinese vessels went to Arabia, and even to Egypt.

Japan. Since the expulsion of the Portuguese from Japan, the commerce of this country has been almost wholly domestic. The only foreigners, with whom the Japanese still have any trade, are the Chinese and the Dutch, and these are limited to the single port of Nangasaki. The Chinese supply the Japanese with rice, common porcelain, sugar, ginseng, ivory, silks, nankeen, lead, tin plates, alum, &c.; and, in return, receive copper, camphor, lackered wares, pearls, coals, and a metallic composition called *sowas*, consisting of copper and a small quantity of gold. The Dutch obtain chiefly copper, camphor, lacker, and lackered wares. Only two Dutch and twelve Chinese vessels are allowed to enter the harbour of Nangasaki annually. After the arrival of a vessel, and the performance of the preliminary ceremonies, the goods are sent on shore. Then come the imperial officers (for the trade with foreign countries is the monopoly of the emperor), who examine the quality and the quantity of the goods, deliberate together, and fix the price of the native commodities that are demanded in return. Foreigners must submit to these conditions, or keep the goods which they have brought. The Japanese merchants can obtain foreign goods only by purchasing them of the emperor. In the manufacture of silks and woollens, porcelain and lackered wares, the Japanese are in no degree inferior to the Europeans. In the manufacture of hardware, they have also attained great skill. The Japanese sabres and daggers

are very excellent, and are perhaps surpassed only by the sabres of Damascus. In polishing steel and all other metals, they are also very skilful, and their fine porcelains are much superior to the Chinese. In the beginning of the 17th century, the English began to trade with Japan; but the Portuguese missionaries, and afterwards the Dutch, succeeded in prejudicing the government against them. In 1673, the attempt to renew the trade was again frustrated by the Dutch. On account of the great advantages which it was thought this trade would ensure to Britain, a third attempt was made in 1699, and the factory at Canton was instructed to enter into connexion with Japan, if by any means possible. The result, however, did not satisfy expectation, and all further attempts have been given up. In 1813, however, when Java was subjected to Great Britain, the East India company had some slight intercourse with Japan. The Russian mission to Japan, under Krusenstern, in 1805, was no less unsuccessful than the British had been. See *Golownin*.

The Islands of Amboyna, Banca, the Bandas, Java, Sumatra, Borneo, &c.—From Amboyna are exported cloves, to confine the cultivation of which solely to this island, the Dutch took great pains to extirpate all the clove-trees on the neighbouring islands. For this purpose, also, the government of Amboyna, with a numerous retinue, still makes a journey every year to the other Dutch islands. Banca is celebrated for its tin mines, and the exportation of this tin to China is of much importance, as the Chinese prefer it to the English, on account of its malleability. About 4,000,000 pounds of tin are obtained annually. The Banda islands produce nutmegs and mace. The staple exports from Batavia, where all the goods of the Dutch East India company are deposited, are pepper, rice, cotton, sugar, coffee and indigo. 6,250,000 pounds of pepper, part of which is raised on the island itself, part brought from Bantam, Sumatra, Borneo, and the other islands, are annually stored in the magazines. Both coffee and sugar have also been cultivated here, of late years, to the amount each of 10,000,000 pounds. Borneo has, besides pepper, gold in dust and bars, wax, sago, camphor, the last of the most excellent quality. In addition to the Dutch and English, the Chinese have here an active trade. The exports of Ceylon are cinnamon, pepper, coffee, tobacco, betel, cocoa-nuts, drugs, timber, pearls, precious stones, corals, &c. Of the Philippines, the principal are Lucan or Manilla, and Magindanao or Mindana. The exports are indigo, sugar, silk, gold dust, quassia, pepper, tortoise-shell, wax, precious stones, silver, sago and tobacco. The trade of the Philippines with China and South America is considerable. Manilla produces sugar, the best Asiatic tobacco, indigo, and a kind of hemp. The Prince of Wales' island, from its situation between India, China, and the Eastern Isles, has an important trade. Its exports are chiefly benzoin, pepper, betel-nuts, groceries, metals, East India zinc, cochineal, eagle-wood, Japan-wood, elephants' teeth, sugar, and silver bullion. Sumatra carries on considerable trade. The exports are gold dust, betel, benzoin, pepper, camphor, Japan-wood, sulphur and rattans, wax, gum-lac, groceries, tin, &c.

III. Africa. The want of navigable rivers, and the immeasurable deserts by which the fruitful regions of Africa are separated, form an insurmountable obstacle to that extension of commerce, which the great fertility of this quarter of the globe would promise. In addition to the intercourse of the interior, the commerce of Africa has its sources in Egypt, the Barbary states, on the west coast in Guinea, in the neighbourhood of the rivers Gambia, Niger, and Senegal, at the cape of Good Hope and the Portuguese colonies, and on the coasts of the Red sea. The inland trade is carried on by means of caravans. The African caravans consist of from 500 to 2000 camels. The three principal countries from which they proceed are Morocco, Fez, and Egypt. The chief articles of the inland trade of Africa are salt, gold, and slaves. The greatest caravans go from the western coast and from the interior by way of Timbuctoo, the great mart of the inland trade, and other places of depot, to the eastern coast, where the most important commercial places are Natal (on the coast of Lagoa), Soffala, Quilimane, Mozambique, Querimba, Quiloa, Mombaza, Melinda, Brava, Magadoxo, Berbera, Zeila, and Adel. Quilimane, Mozambique, and Melinda, are Portuguese settlements. From Adel, Zeila, Berbera, and Brava are exported, mainly, gold dust, ivory, and incense, for which the products of Arabia and the East Indies are returned. There is considerable trade between the British settlements in the East Indies and Mozambique, and the English obtain elephants' and hippopotamus' teeth, tortoise-shell, drugs, cowries, gold, &c.

The Barbary States. The commercial intercourse of the Barbary states with Europeans is very inconsiderable and vacillating, and the little business which is transacted is mainly in the hands of the French, British, and Americans. The exports consist of olive-oil, wax, wool, wheat, gums, almonds, dates, aromatic seeds, ivory, leather, hides, and ostrich-feathers. Even the coral fisheries on the coasts (from cape Rosa to cape Roux) are in the hands of the French and Italians; and the annual produce of about 50,000 pounds of coral is about £100,000. But far more important commerce is pursued by the Barbary states with Arabia, Egypt, and the interior of Africa. Their caravans are met with in Mecca, Cairo, and Alexandria. The chief commercial cities are Algiers, Tunis, Tripoli, Sallee, and Agadeez, or Santa Cruz, and in Morocco, Mogadore. Before the French revolution, the commerce of Algiers was wholly in the hands of a company of French merchants at Marseilles, who had regular settlements in the ports of Bona, La Calle, and Il-Col. But, in 1806, the dey conveyed, for £11,250, the possession of those ports to Britain. The chief ports of export of Algiers are Bona and Oran. Tunis is the most important commercial state in Barbary. Its chief harbours are Biserta, Susa, and Soliman. Tripoli has little trade, and its exports consist mostly of saffron, ashes, senna leaves, and madder. The trade of Morocco and Sallee is also of little importance. Agadeez, or Santa Cruz, is the most southerly harbour of Morocco, and was once the centre of a very important trade. Fez is still such a centre between the ports of Morocco, the Mediterranean sea, and the interior of Africa. See *Timbuctoo* and *Wassanah*.

Cape of Good Hope. The trade with the cape of Good Hope is extremely advantageous to Great Britain. In 1809, the importation of British goods exceeded £330,000, while the exports of the colony (mostly Cape wine) did not amount to £6000. The amount of the trade has since been very much enlarged by the increase of colonization. The average exports from Great Britain to the cape of Good Hope amount to £476,770, and the imports into Britain from the Cape to £351,225.

Egypt. From its uncommonly favourable situation to the centre of three portions of the globe, this country seems destined by nature to be also the centre of their commerce; but it has altogether lost its former high rank in the commercial world, since it has ceased to be the channel of the India trade. It has, nevertheless, considerable inland trade, which extends into the interior of Africa. Three caravans

go thither every year, from Egypt. One goes to Sennaar, and collects the productions of this country and Abyssinia; another to Darfour, and the third to Fez, whither the productions of Bornou, and all the countries lying along the Nile, are brought. Other caravans exchange Egyptian commodities for those of the East Indies and Arabia. But the most considerable is that which consists of the united caravans of Abyssinia and Western Africa, and goes annually to Mecca. The exports of Egypt are rice, corn, cotton, myrrh, incense, opium, dates, mother-of-pearl, ivory, gums and drugs of various kinds, hides, wax, &c., most of which go to Constantinople, the Barbary states, Great Britain, Venice, and Marseilles. It also exports the productions of Arabia, e. g., Mocha coffee. The chief commercial cities are Cairo and Alexandria, since 1819 united again by a canal. Cairo has two ports, Rosetta and Damietta. France sends to Egypt woollen cloth, red caps, fringes of all kinds, and ornaments of dress, ordinary china ware, arms, &c. Britain sends muslins, and cloths of different kinds, alum, iron, lead, vitriol, guns, &c. From Florence, silks are imported.

Guinea. Sierra Leone, and the Pepper, Ivory, Gold, and Slave Coasts, where the Dutch, French, British, and Danes have settlements, export gold dust, ivory, gums, hides, &c., and formerly slaves, in exchange for woollen and cotton goods, linen, arms, gunpowder, &c. The coasts of Lower Guinea (Congo, Angola, &c.), and the Guinea islands, mostly occupied by the Portuguese, export grain, provisions, cotton, indigo, sugar, &c. The slave trade (q. v.) is here prosecuted still by the Portuguese. Among the other

African Islands, the Azores raise, for exportation, wine and fruits. About 20,000 pipes of the former are annually exported by the British and Americans, chiefly to the East and West Indies. The island of St Michael sends, every year, to Britain and the United States 60—80,000 boxes of oranges. The oranges of the island of Pico are remarkable for their superior quality. This island also produces a beautiful kind of wood, which is almost equal to mahogany.—The staple productions of the Canaries are archil, in its raw state, rose-wood, brandy, and Canary wine. The last goes chiefly to the West Indies and Britain, in the latter country it is also sold for Madeira wine.—The cape Verd islands export archil in a raw state, and coarse cotton cloths for the use of the Africans.—The staple product of Madeira is valuable wine, which is divided into five kinds, according to the market for which it is designed. The most excellent is called *London particular*. The next in quality is also sent to the London market. Of inferior quality is that destined for the India market. The kind that goes to America holds the fourth rank, and the fifth is designated by the name of *cargo*. Of this wine, the British annually receive more than 7000 pipes; the United States about 3000.—The Isle of Bourbon produces coffee, cloves, white pepper, cotton, gums, benzoin, and aloes. Its trade is confined almost wholly to Madagascar, Isle de France, the Comoro islands, and the settlements of the Arabs on the eastern coasts of Africa.—The Isle de France, or Mauritius, exports coffee, indigo, cotton, sugar, nutmegs, cloves, ambergris, &c.—The exports of Madagascar are cowries, betel-nuts, ambergris, wax, cocoa-nuts and corn.

IV. America. The extensive coasts of America give it all the commercial advantages of the ancient world, free from the obstacles presented by those masses of continents, the interior of which is so remote from the sea and destitute of navigable rivers, like the whole of Africa and the boundless tracts of Asiatic Tartary and Siberia. In the abundance of navigable rivers, both North and South America have an immense advantage over the other quarters of the world. The long chain of great lakes, and numerous navigable rivers in North America are already the theatre of a very active commerce. The great inland countries of South America are rendered accessible by rivers of gigantic magnitude, and from the month of the river Plata to the gulf of Darien, an inland navigation may be effected, almost without having recourse to the aid of art. But there still remains, for the promotion of American commerce, the execution of a great work—the digging through the narrow isthmus of Darien—by which a connexion between the Pacific and Atlantic would be effected, the advantages of which would be incalculable. The western passage to India, which Columbus sought for, would then be effected. Alexander von Humboldt points out three places as most adapted to the execution of such a project. Nature herself seems willing to assist, for, though the mountains forbid the idea of forming a canal immediately across the isthmus, yet, by starting in lat. 12° N., joining the head of lake Nicaragua to a small river which runs into the Pacific ocean, and forming a canal thirty miles long, through a low, level country, a communication between the two oceans might be effected. The governments which are most directly interested in making such a canal, are at present too weak and too unsettled to be able to carry it into effect.

The United States of North America. The rapid progress which the United States have made, in commerce and navigation, is unparalleled. Hardly had this people appeared on the ocean, before every coast of the earth was visited by their navigators While they are seen covering the ocean with their vessels, throughout the Atlantic coast, even to cape Horn, whence they enter the broad Pacific; in the other direction, they press onward to the ice of the north pole, and penetrate the deep recesses of Hudson's bay and Davis's straits. The coasts of the whole southern hemisphere, the western coast of America, and the eastern coasts of Asia, are visited by them. It is a very common thing for an American merchantman to make a voyage round the world, starting from the United States, going round cape Horn to the north-west coast of America, taking in furs, sailing to China, and going thence, with tea, &c., to the ports of Europe. The American whalers are distinguished for skill and boldness.

Agricultural Exports. The trade of the United States for the year ending September, 1828, may be assumed as the basis of the remarks to be made upon the subject of this commerce. The exports of domestic products for that year, according to the custom-house estimates, were 50,669,669 dollars.* Those of cotton, the great staple of the country, were 22,487,229 dollars, and, accordingly, nearly half of the entire amount. The next greatest export is that of tobacco, which amounted to 5,269,960 dollars. Of rice, the export amounted to 2,620,696 dollars. The value of these three articles, being over 30,000,000 dollars, thus constituted three-fifths of the whole. In the annual returns made to congress, the exports of domestic products are divided into those of the *sea*, the *forest*, *agriculture*, and *manufactures*. The three species of agricultural articles above mentioned are mostly the productions of the Southern States, including Virginia and Kentucky. The other exports, coming under the same head, are mostly fur-

* In this and the other statements connected with American commerce, as they are somewhat minute in their details, the currency of the country is retained, for the sake of accuracy.

nished by the Middle and Western States; namely, beef, tallow, hides and cattle, butter, cheese, pork, bacon and hogs, horses, mules, sheep, flour, biscuits, corn-meal, rye-meal, oats, potatoes and apples, flax-seed and hops. Of these articles, the principal is flour and biscuit, the value of which was 4,464,774 dollars, being the third article in value among the exports. The fifth article in value is that of swine and their products, viz., bacon, pork, and lard, the value of which was 1,495,830 dollars, making about one thirty-third part in value of the whole export. The articles of corn-meal and rye-meal amounted to 881,894 dollars, constituting a little more than one-sixtieth part of the whole exports. Cattle and their products, including butter and cheese, exceeded the last amount, being 896,316 dollars. This species of export is of far less comparative importance in the trade than formerly, being limited to its present amount, not by the capacity for production, but by the extent of demand in the foreign markets; for an increase of the foreign demand would very soon double and treble the quantity. Some of the articles comprehended in the above list, though agricultural products, yet involve some process of manufacture; such, for example, as butter, cheese, bacon, flour, biscuit, meal, and part of the tobacco. A great many, however, of the exports coming under the head of *manufactures*, include in them the value of materials supplied by agriculture, such as the cotton fabrics, those of leather, and spirits distilled from grain; so that on the whole, the strictly agricultural products of the country constitute a larger proportion of the whole exports than the tables represent; and yet the proportion represented by the tables is very large, being 38,500,000 out of the 50,000,000; and, if we add the value of the materials supplied by agriculture for the manufactured exports, we shall have at least six-sevenths of the whole domestic exportation consisting of the raw products of agriculture.—*Products of the Sea.* The products of the whale, cod, mackerel, and herring fisheries, exported mostly from the Northern States, amount to 1,693,980 dollars, being nearly a thirtieth part of the whole domestic export. Nearly one half of this value consists of codfish, and more than one third of the products of the whale-fisheries.—*Products of the Forest.* The value of skins, furs, ginseng, lumber, staves, bark, tar, pitch, rosin, and turpentine, and pot and pearl ashes, partly from the Northern and partly from the Southern States, which were formerly of much greater comparative importance in the trade of the country, now constitutes about one-thirteenth part of the whole value of the domestic exports, and amounts to 3,889,611 dollars. A large proportion of the trade in these articles, as well as in those of codfish and bread-stuffs, is carried on with the West Indies, Mexico, and South America. The skins and the furs go to Europe and Canton, the ginseng to Canton, but in less quantity than formerly, being in 1828 but 91,164 dollars; and the pot and pearl ashes are sent to Britain and France.—*Manufactures.* The manufactures are, as yet, of the coarser sort, consisting partly of articles made of the products of the country, and partly of those fabricated from foreign materials. But it is obvious that the arts of the country, in their early stages, will be most naturally directed to the working of the raw materials of domestic production; and we accordingly find, that a very small part of the value of exported manufactures consists of the cost of raw materials previously imported. The articles in which the foreign materials form a considerable part of the value, are spirits manufactured from molasses, refined sugar, articles of iron, cordage, chocolate, gunpowder, umbrellas, and parasols, gold and silver coin, and jewelry. The whole estimated value of exports of home manufactures is about 6,500,000 dollars, being about 13 per cent. of the whole domestic exports of the country. About 700,000 dollars of this amount ought to be struck out of the list of domestic exports, being gold and silver coin, consisting, mostly, of metals imported from abroad, and, after being coined at the mint, again exported. The labour put upon these materials, in coining, is so inconsiderable a part of their value that the value of the coin of the country exported ought not to be included in the estimate of the value of domestic exports. Considerable quantities of gold, it is true, have been produced in North Carolina, but by no means enough, as yet, to supply the demand for the consumption of the country, though it is to be considered, at the same time, that this article, as far as it can be supplied from the domestic mines, will tend directly abroad, being drawn into this channel by the higher price of gold, compared with silver, in Britain and France than in the United States; the value being, in Britain, as 15·6, in France, as 15·5046, and in the United States, as 15·407 to 1. Consequently, the gold, whether in coin, or bullion, tends strongly to leave the country. Some of it is arrested for use in jewelry and the arts, but very little in the currency, or in the vaults of the banks. Omitting this article, then, the other articles above enumerated, being the only ones, the value of which is made up, in any considerable degree, of foreign materials, are valued, in the returns, at 683,000 dollars. The value of materials imported, and then wrought up in manufactured articles, and exported, and included in the list of domestic manufactures, may be estimated at about 200,000 or 250,000 dollars; leaving the net exports of manufactures from the raw products supplied by the country about 5,750,000 dollars. As cotton fabrics form a large item in this list of exported manufactures, and those fabrics are mostly of the coarser kind, the raw material will constitute a very considerable part of their value, and the proportional value of the direct wages of manufacturing labour, incorporated in these exports, will be proportionally less. If, for instance, a plough, or trunk, or quantity of combs, be sent abroad, almost the whole value of the export consists of the wages of the manufacturers; and a still greater proportion of the value of earthen and stone wares, which make a very considerable item in this list, is of this description; whereas an export of spirits distilled from West India molasses comprises a comparatively small proportional value of manufacturing labour. Taking the whole list of domestic manufactured articles together, and making allowances for the cost of the raw materials, in their rudest state, after they are taken from the ground or from animals, and assume the character of merchandise, by deducting their value from the gross amount of that of the exported manufactures, the remainder, which is the result of the manufacturing labour, interest of capital, and profits incorporated into these materials, to bring them into the state in which they are exported, may be estimated at about 4,000,000 dollars. We will now glance hastily at the descriptions of articles on which the arts of the United States are employed for the supply of foreign markets; and the most considerable of them is cotton twist, thread, and fabrics, the exported value of which, for the year 1828, was 1,000,000 dollars and a fraction over, being one fiftieth part of the whole domestic exports, the principal markets of which are South America, Mexico, and the Mediterranean. The value of leather, and its various manufactures, exported, is a little over 500,000 dollars, making one per cent. of the entire exports of the description of which we are speaking. The value of hats exported during the same year was about 333,300 dollars—a very large amount, considering

the short period since this article has been sent to foreign markets. Soap and candles have long been supplied for the foreign markets, the amount for the year in question being about 900,000 dollars. The various articles manufactured, for the most part, of wood, such as furniture, or of wood, leather, and iron, such as coaches and carriages, besides various agricultural implements supplied to the West Indies and South America, constitute a very important branch of trade, which amounted to between 600,000 and 700,000 dollars. American glass is also exported to a small extent. The value sent abroad in 1828 was 51,452 dollars, and it bids fair to be increased. The other exports consist of a variety of articles in small quantities, among which are, wearing apparel, combs and buttons, brushes, fire-engines and apparatus, printing-presses and types, musical instruments, books, maps, paper and stationery, and trunks. It is apparent, from the above enumeration and estimates, that the manufactured articles, of which the export is most considerable and the most flourishing, are those of which the raw materials consist, mostly, of cotton, wood, and leather.

Foreign Exports. The foreign articles imported and again exported from the country, during the same year, amounted to 21,595,017 dollars. This transit trade thus appears to form a very important part of the American commerce. But one-third of this whole amount consists of an article which affords very little freight, namely, specie, the export of which, during the same year, was about 7,500,000 dollars. Another large item in value, of this transit trade, consists of cotton fabrics, the exports of which were 2,000,000 dollars. The foreign silks exported amounted to about a quarter as much. The value of wines exported was about 333,300 dollars; that of teas about twice as much; and that of coffee and cocoa 1,500,000, and of sugar nearly 1,000,000 dollars. These are the most important articles of foreign export. The other exports of foreign articles previously imported amounted, during the same year, to about 8,000,000 dollars in the whole; but it is not necessary to enumerate them.

Imports. The imports, for the same period, according to the custom-house estimates, amounted to 88,589,824 dollars, and exceed the estimated value of the exports by about 16,250,000 dollars. There should, of course, be an excess of value of imports, according to those returns, whether their value is estimated at the cost in foreign ports, or at the market-price in the American ports; for these goods are the returns for the exports, the value of which is estimated at the rate of the markets in the United States; and, unless a greater value of merchandise can be obtained in exchange in the foreign ports, the ship-owners would obtain nothing for outward freight: and still more ought the value of the imports in the American markets, after deducting duties, to exceed that of the exports; for this excess is the only fund for paying the two freights and interest on the capital employed. This excess, for the year in question, was about 22 per cent., which cannot, however, be considered very exact, but is probably below the actual rate. That it must be a large amount, in order to save the merchants from loss, is evident; for the registered tonnage, which is mostly employed in foreign trade, is about 750,000 tons, so that an excess of 16,000,000 dollars in the value of imports over that of exports, supposing an exchange of one for the other, would give only about 21 dollars per ton per annum for the shipping employment—an amount scarcely sufficient to defray the expenses of the navigation, including port-charges, and leave a surplus for interest on the capital invested in the cargoes, and a small profit to the merchant. But the rate per ton for the shipping actually employed in the foreign trade, if we estimate the accession at 16,000,000 dollars, and suppose the whole trade confined to American ships, will exceed that above mentioned, since the registered vessels are partially employed in the coasting-trade, as vessels often take a cargo from one home port to another, whence a cargo is taken for exportation. But a part of this trade requires none of the excess, of which we have been speaking, to defray the expense of the navigation, for about one-thirteenth part in value is carried on in foreign bottoms, the imports in which were about 6,500,000 dollars. If the whole trade were carried on by foreign shipping, and the whole were a barter trade, without credits, as the trade between any two nations, or any number of nations, must, in effect, be, in the long run, the value of exports and imports, estimated at the prices in the home market, after deducting duties paid on importation, must be just equal; for, in the case supposed, all the expenses for transportation are defrayed by the foreign ship-owners. In proportion, therefore, as foreign shipping is employed in the trade, the excess of the value of imports over that of exports will be reduced; since if a country employs foreign shipping in its trade, it must export an additional value of merchandise to pay the freights, or import a smaller value of merchandise in exchange for the same exports. In regard to the various kinds of goods imported, without pretending to great exactness, which is the less important as the proportions vary considerably from year to year, it appears that some of the principal articles have constituted nearly the following proportion of the whole imports, previously to 1828; viz.—wool and woollen fabrics, 11 per cent.; cotton stuffs, 12; silks, 10; hemp and flax, and manufactures of them, 5; iron and steel, and manufactures of them 5; spirits, $1\frac{1}{2}$; molasses, $2\frac{1}{2}$; teas, 4; coffee, $3\frac{1}{2}$; sugar, $5\frac{1}{2}$; and indigo, $1\frac{1}{2}$ per cent.

The principal trade, both import and export, is with Great Britain and its dependencies, whence, in 1826, the imports were forty-two ninety-sixths of the whole importation. But to state, even in a general manner, the species of merchandise of which the commerce to and from each country principally consists, would extend this part of the present article to too great a length. Before closing it, however, we should not omit to remark, that the domestic trade of the country is more extensive and more important than the foreign. That it is more extensive, appears from the returns of the shipping, a greater quantity of tonnage being employed in the coasting trade and fisheries than in the foreign commerce; and as these vessels make from 3 to 10, 12 or 20 passages in a year, according to the distance of the ports between which they trade, the amount of commercial exchanges along the coast, and up the rivers to the head of sloop navigation, without including the trade between the coast and the interior, must greatly exceed the foreign commerce.

From the official report of the treasury department, it appears, that the imports into the United States, during the year ending September 30, 1829, amounted to 74,492,527 dollars, of which amount 69,325,552 dollars were imported in American vessels, and 5,166,975 dollars in foreign vessels; that the exports, during the same year, amounted to 72,358,671 dollars, of which 55,700,103 dollars were of domestic produce, and 16,658,478 dollars of foreign produce; that of domestic articles, 46,974,554 dollars were exported in American vessels, and 8,725,639 dollars in foreign vessels; and of the foreign articles, 15,114,887 dollars were exported in American vessels, and 1,543,591 dollars in foreign vessels; that

872,946 tons of American shipping entered, and 944,799 cleared, from the ports of the United States; and that 130,743 tons of foreign shipping entered, and 133,006 cleared, during the same period. (See the valuable *Statistical Tables*, by Watterston and Van Zandt, Washington, 1829.)

The Canadas, Nova Scotia, and New Brunswick. The trade of the two Canadas was long confined to the bare produce of the fisheries and the fur trade; but, in consequence of the improvement of the British colonial system, and the embargo which was imposed on the American trade during the last war of the United States with Great Britain, it has much increased. Its exports are wheat, flour, corn, biscuit, fish, oak and pine timber, staves, masts, lumber, Canadian balsam, spruce beer, pot and pearl ashes, cast-iron, furs and skins, castoreum, ginseng, &c. The imports are wine, rum, sugar, molasses, coffee, tobacco, salt, coal, British manufactures. Since 1825, the trade of Canada has increased rapidly. (See *Canada*.) The trade is mostly with the British West India colonies and with the mother country. They do some business, however, with the United States (q. v.). The trade which they have with the Indian tribes, consists merely of barter.—Nova Scotia and New Brunswick have nearly the same exports. In Haliburton's Nova Scotia, vol. i, p. 233, is an interesting table of the prices of different articles, estimated in spring beaver, as settled by government in 1761. The trade of Nova Scotia has lately again increased, particularly with the West Indies. (See the statistical table in Th. C. Haliburton's *Histor. and Statis. Account of Nova Scotia*, 2 vols., Halifax, 1829.)

Mexico. The commerce of Mexico is, at present, checked by natural and political causes. The want of river communication is a great impediment to its internal commerce. Roads lead from the *plateaux* to the seaports, but they are very imperfect, and beasts of burden, therefore, are preferred to carriages, which would not be able to make their way. A much easier communication between the Mexican Atlantic seaports and those on the coast of the Pacific, would be effected in case of the execution of the great canal across the isthmus of Tehuantepec, so much spoken of. The principal objects of export are gold and silver, either in bullion, coined, or worked up in various ways; cochineal, sugar, flour, indigo, salt meat, dried vegetables, tanned hides, sarsaparilla, vanilla, jalap, soap, Campeachy wood, and pimento of Tabasco. Among the articles imported are woollen cloths, silks of Lyons, linen from Germany, white and printed calicoes from France, Britain, and the United States, paper, china, spirits, cacao, quicksilver, iron, steel, wine, wax, jewelry, watches and clocks, and all kinds of ornaments. In 1826, 1267 vessels entered the ports of the republic. The chief port of Mexico is Vera Cruz. Mexico, the capital, is a commercial place, as we might easily suppose to be the case in a country in which very little is manufactured, and which is so fertile. A part of the commerce of the United States with Mexico is carried on by means of caravans, which go from the state of Missouri to Santa Fe, in Texas. The smuggling trade in Mexico is very great. The chief commercial cities of Mexico are Acapulco and Vera Cruz. Acapulco, or Los Reyes, carries on a considerable trade with the Philippines, and the coasts of Quito and Peru. To Manilla a galleon used to be sent from this port every year, freighted with silver, cochineal, cacao, sweet oil, Spanish wool, and European toys. This brought back muslins, printed linens, silks, Chinese goods, groceries, spices, and precious stones. Guatimala is celebrated for its indigo, which is noted for its hardness, lustre, and weight.

South America. South America has many articles of trade. The mineral treasures of the country are boundless. In the sixteenth century, gold and silver existed in such profusion, that, for twenty-five years, 13,000,000 dollars are said to have been annually exported to Spain from Peru alone, exclusive of what was sent in bars. These precious metals are found throughout Peru, Chile, and the upper section of Tucuman, especially in the Cordilleras; but, in addition to gold and silver, this immeasurable chain of mountains affords copper, lead, iron, and platina. The richest mines of South America are those of the province Las Charcas, in the territory of the former vice-royalty of Buenos Ayres. There are, in that district, thirty gold mines, twenty-seven silver mines, seven copper, one tin, and seven lead mines. The richest of these mines are those of Potosi, which are situated near the sources of the La Plata. Acosta's account, that, during forty years that the mines had been wrought, they had yielded 12,000,000,000 dollars, is much exaggerated. But we gather from official reports, that, from the time of the discovery of America, till 1538, the fifth part, accruing to the king, of all the silver obtained from the mines of Potosi, and registered, amounted to 395,619,000 dollars, so that, when 39 years had elapsed from the discovery of America, 41,255,043 dollars were obtained annually, exclusive of the considerable quantities which undoubtedly were conveyed from the country secretly, and without the payment of duties, and of that which was used for making silver vessels, images, and ornaments for the monasteries and churches, which must have amounted to an immense sum, since all the religious establishments in the country, and especially in the city of Potosi, were very rich in silver vessels. But, whether owing to the exhaustion of the mines themselves, or the faulty management of them, the profits have since diminished. The other exports from South America, although the Spanish and Portuguese directed their chief attention to the obtaining of metals, are very considerable. The following are the principal: cochineal, indigo, cacao, the Peruvian bark, hides, ox horns, tallow, wax, cotton, wool, flax, hemp, tobacco, sugar, coffee, ginger, pimento, jalap, sarsaparilla, ipecacuanha, guaiacum, dragon's blood, and various other medicinal gums, dye-wood, ebony, mahogany, emeralds, various kinds of balsams, &c.

The chief commercial cities of South America are Rio Janeiro, Buenos Ayres, Lima, Carthagena, Caracas, Potosi, and Bahia. Buenos Ayres was in possession of the transit trade of all the Spanish possessions in America, and, before the beginning of the revolution, was the mart of the trade of the mother country and its colonies. The principal source of gain for Caracas is the cacao plant, as it supplies nearly two-thirds of the European demand. The hides and skins which it exports are superior to those of Buenos Ayres; and the rich ore from the copper mines of Aroa is superior to the Swedish, or to that of Coquimbo, in Chile. The internal trade of South America, especially between Buenos Ayres and Peru, is very considerable. That with the Indian tribes is chiefly in the way of barter; axes, knives, scissors, swords, necklaces, mirrors, and coarse cotton and woollen goods, being exchanged for the productions of the country, especially the celebrated Paraguay tea, and some fine furs.

Brazil has three great commercial cities—Rio Janeiro, Bahia, or St Salvador, and Pernambuco. The exports are, chiefly, cotton, indigo, sugar, coffee, rice, tobacco, tallow, mahogany, Peruvian bark, ipecacuanha, hides, gold, cacao, vanilla, the diamond, the topaz, chrysolite, amethyst, and other precious stones, and a great variety of dye-stuffs, balsams and

gums, dried beef, and India-rubber shoes. The greater part of the Brazilian trade is in the hands of the British. The imports are iron, steel, copper utensils, salt, woollen cloths, linen, calicoes, hats, shoes of all kinds, china, glass-ware, trinkets, books, paper, watches, clocks, and particularly East India goods, such as are not raised in Brazil. Portugal sends to Brazil, wine, oil, spirits, hats; the United States, flour, turpentine, and furniture. Naval munitions, sailors' clothes, and arms are likewise imported.

Colombia, consisting of Venezuela and New Grenada, says Alexander Humboldt, has received from nature a greater and richer variety of vegetable products, suited for commerce, than any other country of Spanish America; yet its commerce has been declining every year since its separation from Spain. In Colombia, Peruvian bark is found of the best quality and in the greatest quantity. Coffee, indigo, sugar, cotton, cacao, ipecacuanha, the tobacco of Varinas, hides, and dried meat, pearls, gold, and platina, &c., are obtained in this highly favoured country. Its imports embrace all kinds of manufactured goods, oil, soap, ropes, paper, in fact almost everything which is wanted by the indolent inhabitants, and made by the hands of men; for the people themselves manufacture hardly anything. Humboldt has estimated the exports of Colombia at 9,000,000 dollars, and its imports at 11,200,000 dollars. M. Mollien estimates the former at 8,000,000 dollars, and the latter at 10,000,000 dollars. The state of this country, at the present moment, prevents the possibility of obtaining accurate information on this subject. The ports of La Guayra (harbour of Caracas), Rio del Hacha, St Martha, Carthagena, Chagres, Porto Cabello, Panama, and Guayaquil are the most frequented by strangers. The British, from Jamaica, the Americans and French, are the nations who trade principally with the Colombians in the Atlantic ports; the Peruvian vessels carry on the coasting trade on the Pacific.

Buenos Ayres, like all the other South American states, is in an unsettled condition. The chief exports of this country are horse and ox hides; in fact, Buenos Ayres may be called, by way of eminence, the country of cattle. Its imports include all the manufactured articles which the inhabitants make use of. Britain sends thither woollen and cotton cloth, cutlery, hardware, furniture, saddlery, hats, porter, and cheese; the United States, lumber, cod-fish, mackerel, and herring, leather, gunpowder, provisions; from Brazil are sent sugar, coffee, cotton, rum; steel and iron from the north of Europe; and France sends her manufactures. The exports and imports are estimated at 9,000,000 dollars.

The commerce of *Chile* is, at present, in a low condition. Its rich mines are poorly managed, and the political state of the country prevents its commerce from acquiring that activity which it might easily attain by the export of the precious metals of the country to the East Indies, to give in return for sugar and cotton. It could also provide Peru with salt meat, and take in return coffee, sugar, &c. Caldcleugh estimates the British importations into Valparaiso, in 1822, at 4,071,250 francs, and Lowe at 47,248,625 francs, for the same year. The United States send thither flour.

Peru trades with the United States, with Europe, the Philippine islands, Guatimala, and Chile, and, by land, with Buenos Ayres. Its exports are chiefly gold and silver, wine, brandy, sugar, pimento, Peruvian bark, salt, vicuna wool, and coarse woollens. It receives, in return, from the United States, breadstuffs, and manufactures of various sorts; from Europe, manufactured goods, particularly silks, fine cloth, lace, fine linen, and other articles of luxury and show; from the Philippine islands, muslins, tea, and other East India goods; from Guatimala, indigo; from Chile, wheat and copper; and from Buenos Ayres, mules and Paraguay tea. Callao is the port of Lima.

The commerce of *Central America*, or Guatimala, is increasing in activity. Colonial commodities, chiefly sugar, coffee, cacao, cotton, indigo, cochineal, ebony, and logwood (from the bay of Honduras), are the principal exports sent to Europe and some of the United States. The imports are linen, from Germany and France; woollen cloths, silks, and wines, from France; British and French calicoes; flour, and some manufactured goods, from the United States. This country is well adapted for commerce on account of its fine harbours and several navigable rivers. A canal across the isthmus would be of vast benefit to this country; in fact, the execution of such a canal would bear a similarity to some of those great inventions, which have changed the face of the world.

The British, Dutch, and French possessions in South America are *Demerara, Berbice, Essequibo, Surinam, and Cayenne*. From Cayenne are exported cloves, Cayenne pepper, annotta, sugar, cotton, coffee, and cacao; from Berbice, rum, sugar, cotton, cacao, &c.; from Demerara, Surinam, and Essequibo, sugar, rum, cotton, coffee, and molasses.

West Indies. The chief islands which constitute the West Indies are Cuba, St Domingo, or Hayti, Jamaica, Barbadoes, Dominica, St Christopher, or St Kitt's, Curaçao, and Guadaloupe. They have all very nearly the same productions, viz. sugar, coffee, wax, ginger, and other spices, mastich, aloes, vanilla, quassia, manioc, maize, cacao, tobacco, indigo, cotton, molasses, mahogany, long peppers, lignum-vitæ, Campeachy wood, yellow wood, gums, tortoise-shell, rum, pimento, &c. Before St Domingo or Hayti became an independent government of blacks, it was the depot of the goods brought from Havanna, Vera Cruz, Guatimala, Carthagena, and Venezuela; but, since that event, Jamaica has been the magazine of all goods from the gulf of Mexico. Trinidad is the great seat of the contraband trade with Cumana, Barcelona, Margarita, and Guiana. The imports are manufactures of all kinds, wine, flour, and, formerly, slaves, who are still smuggled into many of the islands. The West Indies form one great source of the commerce of the world; and we must refer the reader, for more particular information, to the articles on the different islands.

A new path has been laid open to the commerce of the world by the British, to the Southern ocean, where, of late, the Sandwich, the Friendly, and the Society islands have been taken within the circle of European and American intercourse; and in Australia and Van Diemen's land, a great market has been established for the exchange of British manufactures for the productions of nature; while the North Americans have attempted to found commercial settlements on the Washington (Nukahiva) and other islands of the Pacific. (See Moreau de Jonnes *Du Commerce extèrrieur du XIXme Siècle*, 2 vols. Paris, 1826.) In 1828, the imports from New Holland and the South sea islands, into Great Britain, amounted to £83,552, and the exports to £267,529.

Commercial Courts are tribunals distinct from the ordinary civil courts, and are established in commercial towns, or within certain districts, to settle disputes with regard to rights and obligations between persons engaged in trade, with the assistance of experienced merchants, by a brief process, according to equitable principles. It is doubtful whether the commercial nations of antiquity had any commercial tribunals of this sort. The general introduction

of them began in the middle ages. The first of these tribunals was probably that established at Pisa, in the eleventh century, and the basis of its decisions was the code of maritime laws with Pisa, confirmed by pope Gregory VII., in 1075, from which the *Consolato del Mare* may have been, in part, borrowed. At first, the commercial tribunals were not so much courts established by government as arbiters of disputes freely chosen by the merchants, and confirmed by the governments. This is evident from the first chapter of the *Consolato del Mare*, which runs thus:—"The good seamen, ship-owners, and seafaring people generally, are accustomed to assemble on Christmas evening of every year, either all or the greater part of them, at a place of their appointment, and when nearly all are convened, they appoint, not by lot, but by vote, two worthy men, experienced in all maritime affairs, for their consuls, and another, of the same occupation, as judge of appeal. To him are made all appeals from the sentence of the consuls." Under the name of *commercial consuls*, such committees of arbitration were appointed in all the great commercial cities of Europe; and, in the course of time, they really became tribunals of justice, and were, in part at least, administered by men of legal learning and experience. Pope Paul III. confirmed the commercial consuls in Rome. Francis II., in 1560, granted to the Parisian merchants particular arbiters for the adjustment of commercial disputes, and in 1563 was established the Parisian court of commerce, consisting of a judge and four consuls. The same thing soon followed in all the important commercial towns of France. In London, Henry VII. appointed particular commercial judges. The president of the commercial tribunal for the Hanse towns, established in 1447, bore the name of *alderman*. At Nuremberg, in 1621, a similar tribunal was instituted under the name of *inspectors of the markets* (*marktvorsteher*.) There was one, also, in Botzen, in 1630. The diets of the empire even called upon the German princes and commercial cities to follow this example, as the decrees of the empire of 1654 and 1668, and the decree of the imperial commission of October 10, 1663, show. In many of these cities, as in Frankfort on the Maine, and in Leipsic, they were not so much independent authorities as delegates from the city councils. When commercial courts take cognizance particularly or solely of disputes relating to maritime affairs, they are called courts of admiralty. Such a court was erected in Hamburg in 1623. Among the tribunals more recently established are the French, formed in 1808, according to the provisions of the *Code de Commerce;* and the new Hamburg commercial court, of the same kind, which dates from the time when Hamburg was the chief city of a French department; this was, in 1816, retained with some modifications. Their internal regulations commonly require that a part of the members, or, at least, the presidents, should be lawyers: the rest are, for the most part, experienced merchants, who are better adapted than regular judges to give counsel on commercial affairs, with which they are more acquainted, and which, very often, are not to be reduced to simple principles of law, but are to be decided according to commercial practice. Their jurisdiction commonly extends over all commercial disputes, whether occurring during the fairs, or at other times, matters of exchange, insurance, freight, bottomry, average, &c., and, further, over bankrupts, the hiring of shops and stores, clerks, and apprentices, the debts of those who receive goods from merchants upon credit; and all natives and foreigners who traffic in the place, and are found there, all ship-owners, contractors for transporting goods, brokers, factors, &c., are obliged to submit to their decisions. They do as much as possible by oral investigation; and the intention of their institution is, that they shall avoid the long and formal process of other courts. But when the difficulty and confusion of the matters in dispute occasion the necessity of an investigation in writing, recourse is had thereto. The greater despatch of these courts consists principally in this—that the defendant is orally summoned, once, or several times, to appear before them, at an early day, and, if he twice fails to come, is brought by force; the complaint is then made orally, both parties are heard, and sentence is given, if possible, immediately after. But as this can seldom be done, and most cases require reference to written documents, a day not far distant is appointed for the answer to the complaint, and for the evidence on both sides, and the time is seldom or never prolonged. The remedies against a sentence (such as revision, restitution, &c.; see *Hamburg Code of Commercial Procedure* of Dec. 15, 1815) must be sought from the same judges, and are not easily obtained. Appeals are only allowed in very important cases, and upon the deposit of a large sum as a pledge that the final decision shall be obeyed without delay. The principal features of this process are found in the *Consolato del Mare* (see chapters 8—31), and form the basis of most commercial codes. According to the French code, each tribunal consists of a president, several judges (not more than eight, and not less than two, in number), together with several persons, who, in case of a pressure of business, become assistant judges (vice-judges—*suppléans*), a clerk of the court (*greffier*), and several inferior officers (*huissiers*). (*Code de Commerce*, livre 3, tit. 1, sec. 615—24.) The members of a commercial tribunal are chosen from among the most respectable merchants. Every merchant thirty years of age, who has done business in an honourable manner for five years, can be appointed judge or assistant judge. The president must be forty years old, and have already exercised the office of judge. The election is made by secret ballot. The members elect take an oath before entering upon their office, which they hold for two years; they receive no salary, and cannot be re-elected until a year after the expiration of their term. The rules of the commercial tribunal are to be found under the 25th title of the 2d book of the *Civil Code*, and are very similar to those of the *Consolato del Mare*. From the sentence of these tribunals appeal is made to the court of appeal within whose jurisdiction they happen to be. See *Commercial Law*.

COMMERCIAL LAW (or the *law merchant*) is that which relates to trade, navigation, maritime contracts, such as those of insurance, bottomry, bills of lading, charter-parties, seamen's wages, general average, and also to bills of exchange, bills of credit, factors, and agents. Lord Mansfield describes it as a branch of the public law, and applied to its universal adoption the language of Cicero respecting the great principles of morals and eternal justice—*nec erit alia lex Romæ, alia Athenis*. The body of rules constituting this law is substantially the same in the United States and Europe, the rules, treatises, and decisions of one country and one age being, in general, applicable to the questions arising in any other. The reason is obvious why this law should be common to different nations, for it regulates those contracts and transactions in which they come in contact, being a sort of neutral ground between their hostile interests, institutions, customs, and prejudices. National law, which regulates the conduct of different nations towards each other, is distinguished from maritime law, by which private contracts between individuals are regulated. The first collection of marine laws was that of Rhodes, of which some fragments have come down to us in the Digest of Justinian, in the title *De Lege Rhodia de Jactu;* the col-

lection under the title of *Rhodian Laws*, published at Basle in 1561, and at Frankfort in 1596, being generally considered as spurious. This title and that *De Nautico Fœnore* recognize the first broad principles on the subjects of jettison and maritime law. The law *de exercitoria actione*, in the Digest, also transmits to us their principles as to the liability of the owners for the acts and contracts of the master of a vessel. The remaining rules and principles by which the commercial transactions of the ancients, in the Mediterranean, were governed, have, for the most part, passed into oblivion. The reason of so small a space being assigned to this branch of jurisprudence, in the Roman laws, may be the low estimation in which trade was held by the Romans, who prohibited men of birth and rank from engaging in commerce, of which the code (4. 63. 3.) speaks contemptuously; and Cicero says it was not fitting that the same people should be both the porters and the masters of the world. The Greeks, being the merchants and navigators of the ancients, adopted the Rhodian laws, with modifications. The Athenian law, on the subject of maritime loans, is stated particularly in Boeckh's Economy of Athens, b. 1, sec. 23, from which it appears that the rules on this subject were very definitely settled. The laws of trade naturally followed the trade which they were designed to regulate. Accordingly, we find them first revived in the middle ages, on the shores of the same sea, in one of the islands of which they had their origin; a collection of them being made at Amalfi, a city within the limits of the present kingdom of Naples, about the time of the first crusade, towards the close of the eleventh century, called the *Amalfitan Table*, the authority of which was acknowledged throughout Italy.

The origin of the compilation of sea laws, which passes under the title of *Consolato del Mare*, though involved in some obscurity, is most generally assigned to the city of Barcelona, in Spain. Some writers, however, and particularly Azuni, claim the honour of this collection also for Italy. But Casaregis, a profound commercial jurist, who published an edition of it, in Italian, at Venice, in 1737, and M. Boucher, who published a French translation in 1808, from what he considers the original edition of Barcelona of 1494, both admit the Spanish claim. These laws are supposed by M. Boucher to have been adopted and in use as early as the ninth century, and their authority was acknowledged in all the maritime countries of Europe, and some of the articles of this collection form a part of the present commercial law of all civilized nations. It has been translated into German, also, but no entire English translation has yet been made. It is an ill-arranged, confused compilation; and, though it is interesting as an historical record of the marine laws and customs of the middle ages, a large proportion of its provisions do not apply to the modes of transacting business and making contracts in modern times. The *Jugemens d'Oléron* (or Laws of Oleron) are supposed to have been compiled about the time of Richard I.; and the honour of this collection, like that of the *Consolato*, from which it is partly borrowed, is in dispute, being claimed for the French by Valin, Emerigon, and Cleriac, who say it was made by order of queen Eleanor, duchess of Guienne, for the use of that province, and adopted by her son Richard I., duke of Guienne. But Selden, Coke, and Blackstone assert that it is an English work, published by Richard I., in his character of king of England. The maritime codes of Wisbuy and the Hanse towns are also of historical celebrity, and constitute a part of the legal antiquities of this branch of jurisprudence. These were the principal marine codes down to 1673, the date of the French ordinance of commerce, which treated largely of bills of exchange, and negotiable paper. In 1681 was published, also, the French Ordinance of Marine, one of the most glorious monuments of the reign of Louis XIV. It was framed under the influence of Colbert, and merits all its celebrity, being comprehensive, and including provisions, not only on many of the subjects of commercial law, as we have defined its limits, but, also, very ample regulations on the subject of prizes. These ordinances are the foundation of the present system of marine law in Europe and America. Valin's commentary upon the Ordinance of the Marine, published in 1760, is a profound, original, comprehensive, learned, and accurate work. In 1763, he also published his commentaries on the provisions of the ordinance in relation to prizes. About twenty years afterwards (1782), Emerigon published his masterly treatise on insurance. The two ordinances, with the commentary of Valin, and the treatise of Emerigon made the commercial law a science, of which the principles were now settled, and their application also traced out into a great number of examples. It was now in the power of jurists, judges, and legislators to make every new question and case that should arise only a confirmation and extension, in application, of doctrines which had been established upon conclusive reasons, and made parts of a harmonious system; and all the commercial nations have adopted the system thus formed. It constitutes the present French code of commerce, and appears everywhere in the British, American, and continental treatises and decisions. The other French writers of greatest celebrity, on this branch of law, are Pothier, Cleirac, and Boucher. M. Jacobsen, a jurisconsult of Altona, has published a useful work on the subject of sea laws. The earlier English writers on commercial law were Malynes (a merchant), Molloy (a lawyer), Beawes (a merchant), Postlethwaite, Magens (a *dispacheur*, or adjuster of marine losses, originally of Hamburg, afterwards of London) and Wiskett (a merchant). But the marine law cannot be considered as having become a branch of the general science of jurisprudence in Britain, until the time of lord Mansfield, who appears to have had some considerable acquaintance with the treatise of Valin, from which he drew principles and reasons, and incorporated them into the reluctant common law. By degrees, during his judicial career, this branch of jurisprudence gained popularity, and, from that time, has occupied an important part of the British legal administration, though very few legislative enactments have either disturbed or promoted its progress. Though the maritime law in this country continued in a very rude and undigested state, long after it was arranged into an admirable system in France, yet the assiduity with which it has been cultivated since its introduction, and the splendid talents which have been brought to its illustration, have contributed to advance it with a rapid progress. Among the ornaments of this branch of law, we ought particularly to mention lord Stowell, judge of the British high court of admiralty. The late chief-justice of the court of king's bench, lord Tenterden, by his learned and well-arranged treatise on merchant shipping, contributed very materially to the present advanced state of British commercial jurisprudence. The other principal writers on this law, are Millar, Park, Marshall, Bayley, Chitty, Lawes, Holt, and Benecke. Nor have the Americans been idle spectators of this improvement in a branch of law in which their industry and prosperity are so deeply interested. Though they have supplied but few original systematic treatises and digests, yet, in the numerous, important, and interesting questions that have been brought under discussion before the legal tribunals, the re-

search, comprehensive views, and logical power displayed both by the counsel and the courts, will support a comparison with those of their European contemporaries, who might derive very useful additions to their own adjudications, particularly on the subjects of merchants' shipping and insurance, from the American reports. Among the most eminent of those who have contributed to the elucidation of the commercial law, chief-justice Marshall, and justices Washington and Story, of the supreme court of the United States, and chancellor Kent of New York.

COMMERSON, PHILIBERT, a botanist, born 1727, at Chatillon-les-Dombes, was a doctor of medicine in Montpellier. In 1767, at the command of the king of France, he accompanied Bougainville (q. v.) on his voyage round the world. From the name of a young French lady, Hortense Barré, who accompanied him in a man's dress, he called a flower, now well known, *Hortensia*. During this voyage, he died on the Isle de France, in 1773. He wrote, among other things, a botanical martyrology—a biography of those who have fallen victims to their efforts in the cause of botany. He left his plants, drawings, and papers to the royal cabinet at Paris.

COMMINES. See *Comines*.

COMMITTEE. Large deliberative assemblies, with a great variety of business before them, are unable to discuss and investigate, sufficiently, many subjects on which they are obliged to act. Committees, therefore, are appointed, to examine and to report to the assembly. Committees have a right to choose their chairman. In the British parliament and the legislative bodies in the United States, as, in fact, in all legislative bodies in representative governments, there are select and standing committees. The French chambers are divided into *bureaux*. The standing committees are appointed, in Britain, and the United States, by the speaker or president of the house, at the beginning of each session. In the British parliament, the standing committees appointed at every session are those of privileges and elections, of religion, of grievances, of courts of justice, and of trade, though only the first mentioned acts. In the congress of the United States, the standing committees are very numerous; some of the most important are those of elections, of ways and means, of commerce, of public lands, of the judiciary, of public expenditures, of Indian affairs, of foreign affairs, of manufactures, &c. In fact, business is done by means of committees, much more in the American congress than in the British parliament. The French chamber, on the request of five members, must resolve itself into a secret committee.

Committee of the Whole. Matters of great concernment are usually referred to a committee of the whole house, where general principles are digested in the form of resolutions, which are debated and amended, till they take a shape which meets the approbation of the majority. These, being reported, and confirmed by the house, are then referred to one or more *select committees*, according as the subject divides itself into one or more bills. The sense of the whole assembly is better taken in committee, because in all committees every one speaks as often as he pleases. They generally acquiesce in the chairman named by the speaker, but, like all other committees, have a right to elect their chairman, some member, by consent, putting the question. When the house is desirous of forming itself into a committee, the speaker, on motion, puts the question whether the house will resolve itself into a committee of the whole, to take into consideration such a matter, naming it. No previous question can be put in a committee; nor can this committee adjourn, as others may; but, if their business is unfinished when the time of separation arrives, a motion is made for rising, and the chairman reports that the committee of the whole have, according to order, had under their consideration such a matter, and have made progress therein, but, not having had time to go through the same, have directed him to ask leave to sit again. The question is then put whether the request shall be granted, and, if so, at what time the house will again resolve itself into a committee. But, if they have gone through the matter referred to them, the chairman reports, either immediately, or, if the house wish, at a later period.

COMMITTEE OF PUBLIC SAFETY (*Comité de Salut Public*). Under this name, the Mountain party or Terrorists (see *Terror, Reign of*), in the national convention (see *France*), concealed the dictatorial power which they had assumed to overthrow the *Girondists* (q. v.) and the moderate party, that the Mountain party might rule, and the republic triumph over its domestic and foreign enemies. The revolutionary tribunal was subservient to this committee, which was at first composed of nine, then of twelve members. The committee was established April 6, 1793, in the stead of the *comité de défense générale*, which had existed hardly ten days; and the convention, from the midst of which its members (among them Danton, Barrère, Cambon) were chosen, intrusted it with unlimited power of secret deliberation, and of supervising the ministers. It was, in every case, to provide for the public welfare as its own judgment should dictate; and therefore, after the lapse of a few months, the right of imprisonment was also given it. The prevailing party acted on the ground that France, threatened from within and without, could not be governed as if at peace (as the Girondists wished), but could only be saved by desperate measures, as in times of the greatest danger. But, after the downfall of the Girondists, June 1 and 2, 1793, when the Mountain, on the recommendation of the committee of safety, declared that the population of France consisted of but two parties, patriots and enemies of the revolution, and consigned the latter to the persecution of all good citizens, terror took the place of law. Robespierre (q. v.) soon afterwards, July 27, 1793, became a member of the committee of safety, the members of which were appointed monthly; but the old members were, at this period, commonly re-elected. From this time, the committee governed the Mountain party, and, through it, the convention. As the sole rule of his conduct, Robespierre declared that the main-spring of a popular government in a state of revolution was *la vertu et la terreur!* With him, and in accordance with his views, St Just, Couthon, Billaud de Varennes, Collot d'Herbois, and Hérault de Séchelles acted in the committee. Carnot (q. v.), likewise a member of the committee of public safety, confined himself to the direction of the armies, and left to his colleagues the affairs of the interior. At the motion of these men, the new constitution was suspended for a time, and the revolutionary government conferred on the committee of safety, by a decree of the convention, of Dec. 4, 1793. The committee now instituted in all the communes of the republic, as judges of the suspected, revolutionary committees, composed of the most furious zealots: the number of these new tribunals was as great as 20,000. The last remaining forms of regular process were abolished; their place was supplied by violence, and often by avarice and folly. In this time of internal revolutions, and danger from without, it was not in the power of man to restrain the exasperated fury, which, probably, alone prevented France from being conquered. Finally, Danton, who had

absented himself for a time from the committee, on account of the influence of Robespierre, declared himself against the system of bloodshed; and Robespierre himself acquiesced in the condemnation of the ringleaders of the Paris mob (March 24, 1794), among whom was Hébert (q. v.); but, soon after (April 5), Danton, with Hérault de Séchelles, was himself overthrown by Robespierre. Till July 28, 1794, he now remained master of the lives of thirty millions of men. He appointed Fouquier-Tinville public accuser. Prisons were multiplied and crowded; the prisoners were cruelly treated, betrayed by spies, and condemned without being allowed the privilege of defence; the property of all imprisoned on suspicion, was confiscated, and the guillotine remained *en permanence*. The same violence was practised in the provinces by some of the delegates of the committee of safety, especially Collot d'Herbois, Carrier (q. v.) and Jos. le Bon. Among the numberless victims of the system were the noble Malesherbes and the celebrated Lavoisier. The members of the committee of public safety, and of the *comité de sureté générale*, at last disagreed among themselves. Each committee contained three parties. These, and not Tallien, were the real causes of the 9th Thermidor. In the committee of public safety, Robespierre, Couthon, and St Just (*"gens de la haute main"*) formed one party; Barrère, Billaud, and Collet d'Herbois (*"les gens revolutionnaires"*), another; and Carnot, Prieur, and Lindel (*"les gens d'examen"*), a third. In the *comité de sureté générale*, one party comprised Vadier, Amor, Jagot, Louis (*du bas Rhin*), and Voulland (the *"gens d'expédition"*); to a second belonged Danton and Lebas (*"ecouteurs"*); to the third, Moise Bayle, Lavicomterie, Elie Lacoste, Dubarran (*"les gens de contrepoids"*). Robespierre attempted to remove the unyielding Carnot from the committee of safety. On the other hand, Billaud de Varennes laboured to effect Robespierre's downfall. Couthon, St Just, the Jacobins, and the *commune* of Paris, alone adhered to Robespierre. But when St Just actually proposed, in the committee, a dictatorship for the safety of the state, an opposition was raised against Robespierre, in the national convention, by Vadier, Collot d'Herbois, Billaud de Varennes, and especially by Tallien (q. v.) and Fréron; the dictator and his faction were proscribed, and the victory of Barras (q. v.), on the 9th Thermidor, (July 27), brought Robespierre, his brother, St Just, Couthon, &c., 105 in all, to the scaffold, July 28. The convention now recovered its authority; the Jacobins and the partisans of terrorism (*la queue de Robespierre*) were completely overthrown; at the same time the convention gave the committee of safety and the revolutionary tribunal a more limited power and jurisdiction. The bloody despotism ceased; and when a new constitution introduced (Oct. 28, 1794) a directorial government, (see *Directory*,) the convention was dissolved, and with it sank into its accursed grave the revolutionary government, the reign of terror, and the committee of public safety.

See *Mémoires inédits de Senar* (secretary-general of the committee, who died in 1796), or *Révélations puisées dans les Cartons des Comités de Salut Public et de Sureté Générale* (2d ed., Paris, 1824). The *Mém. Historiques de M. de la Bussière* (Legendre's private secretary) narrate how ingeniously this *employé au comité de salut public* preserved a number of the arrested from condemnation.

COMMODORE (corrupted from the Spanish *commendador*); a general officer in the British marine, invested with the command of a detachment of ships of war destined for any particular enterprise. He retains this title only during the continuance of the expedition during which he has the rank of a brigadier-general in the army, and his ship is distinguished from others in his squadron by a broad, red pendant. The eldest captain of three or more vessels cruising in company is often called *commodore* by courtesy. In the United States, the title *commodore* is only given by courtesy, not officially.

Commodore ship, in a fleet of merchantmen, is the convoy and principal ship, which leads the other vessels, and keeps them together, bearing a light in her top.

COMMODUS ANTONINUS (L. Ælius Aurelius), son of Marcus Aurelius and of Anna Faustina, daughter of Antoninus Pius, was born A.D. 161, and gave early proofs of his cruel and voluptuous character. When a boy of twelve years old, he ordered the overseer of his bath to be thrown into the furnace, because his bath was too hot. His father, who hoped to correct him by mildness and his own example, permitted him early to partake in the government, conferred on him the office of tribune, and, in his sixteenth year, the office of consul, and soon afterwards the titles of *Augustus* and *father of the country*. He married him to Crispina, daughter of Bruttius Præsens. On the death of Marcus Aurelius, A. D. 180, Commodus ascended the throne, and showed himself a more execrable monster than even Caligula, Domitian, or Nero. For his amusement, he cut asunder persons whom he met, put out their eyes, mutilated their noses, ears, &c. He was endowed with extraordinary strength, and often appeared, in imitation of Hercules, dressed in a lion's skin, and armed with a club. Three hundred concubines, and as many boys, even the lowest prostitutes of Rome, were not sufficient to satisfy his infamous lusts. He had even an incestuous intercourse with his sisters, and killed one of them (Lucilla), who had refused to submit to his wishes, and had concerted a conspiracy against him. To fill the treasury, exhausted by his extravagances, he imposed unusual taxes upon the people, sold governments and offices to the highest bidder, and pardoned criminals for money. To display his strength and skill in arms, he appeared publicly on the amphitheatre. He is said to have fought in this way 735 times, and always to have been victorious. Immediately after ascending the throne, Commodus concluded an inglorious peace with the Quadi and with other German nations. In Britain, his valiant general Ulpius Marcellus gained important victories over the Caledonians; on account of which Commodus took the titles of *imperator* and *Britannicus*. The administration of affairs had been, at first, left to his freedman Anterus, who was accused of having seduced the emperor, and was killed by the commanders of the body guard. Commodus, after taking a bloody revenge for the death of his favourite, placed another freedman, Cleander, at the helm of state. A part of the city having been consumed by fire, and the people having been reduced to despair by famine, disturbances broke out, and the emperor was obliged to consent to the death of his minister, who was charged with being the author of these calamities. On the 1st of January, A. D. 193, he intended to appear at the same time as consul and gladiator, after having put to death the two consuls elect. He was so much enraged by the opposition of his friends to this design, that he resolved on their death. The tablets upon which he had written their names were found by accident, and given to one of his concubines (Marcia), who, with surprise, found herself among the number. She conspired, with the rest, against the life of the emperor. They administered poison to him, and, as the poison operated too slowly, he was strangled by the hands of his favourite gladiator, Narcissus (Dec. 31, 192). On the news of his death, which was reported to be the consequence of

an apoplexy, the senate declared him an enemy of the state, ordered his statues to be broken to pieces, and his name to be erased from all public inscriptions. He perished at the age of thirty-one years and nine months, after a reign of twelve and a half years. Rome was indebted to him for her handsomest baths —the *thermæ Antoninianæ*. He established, also, an African fleet, in addition to the Egyptian one, for the purpose of supplying the city with corn.

COMMON CARRIERS. See *Carriers*.

COMMON, Rights of. There are various kinds of rights of common recognized by the common law, namely, of *pasture*, of *piscary* or fishing, of *estovers* or fuel, and of *turbary* or of digging turf. But the phrase usually means the right of pasturing cattle, horses, &c., in a certain field, or within a certain territory. And this again is of different kinds; as common *in gross*, when the grantee is not in the occupation of lands with which this right of pasturage is connected; and *appendant*, where a person, occupying a certain piece of arable land (or *appurtenant*, where he occupies such land or a house), has the right of pasturage in a certain other piece of land; and also a right of common *par cause de vicinage*, or by reason of vicinity,—the right which the tenants of a lord in one town had of pasturing their cattle with those of the tenants of another lord in another town. These rights, in England, have been mostly determined by prescription or immemorial usage; by which also was regulated, in most instances, the kind of animals which might be turned upon the land (which were usually horses, oxen, cows, and sheep, but not goats, hogs, or geese), and the number, and the time of the year when they might be turned in. In the United States of America, there are not wanting instances of right of common, appurtenant and in gross; but the regulation of this species of rights does not occupy a great space in the laws. A law of the province of Massachusetts, of 1693, regulates the rights of common belonging to the freeholders of a town or village, by prescribing the number of cattle that each commoner might put upon the common; and there are rights of common appurtenant in New York, but these are most commonly rights in gross, and the grant from one commoner to another generally specifies the number and kind of beasts to be pastured upon the common field, as "one cow right," or a right for a certain number of sheep, and the like.—Besides the articles on this subject in the abridgments, digests, and general treatises, an elaborate work on rights of common was published in 1824, by Mr Woolrych of London.

COMMON LAW. The phrase, "the common law," is a very familiar expression in English jurisprudence, and has various significations, or rather, is used sometimes in a limited and sometimes in a more enlarged sense. In a large sense, it comprehends the whole body of English law, as well the statutes passed by parliament as the general customary law of the realm. In this manner, it is used in contradistinction to the Roman, or, as we call it, the *civil* law. In a more limited sense, "the common law" expresses that portion of English jurisprudence which is unwritten (*lex non scripta*), in contradistinction to the parliamentary statutes, which are the positive written code (*lex scripta*). For instance, we say that a particular remedy for a wrong is given by the common law, and that another remedy, by way of penalty, is provided by statute; meaning, that the latter depends upon some known act of the legislature; but the former rests altogether upon immemorial usage or general principles, which cannot be traced back to any such act. There is yet a still more limited sense, in which the expression is used to designate that portion of the English common law, which is strictly the custom of the realm, and local and municipal in its origin, in contradistinction to the law of nations, and the maritime and commercial law, which are drawn from the general usages and principles recognized among civilized nations. Correctly speaking, the common law now comprehends the law of nations and the law merchant. But these are of much later introduction into English jurisprudence, than the other general customs of the realm, of which we have been speaking. They have been borrowed, for the most part, from the general usages of merchants, in the commercial nations, which, upon the revival of commerce and letters, inhabited the shores of the Mediterranean. For instance, the law of foreign bills of exchange, of insurance, and of general average, is of comparatively recent adoption in England, and cannot be traced back far in her annals. The law of insurance has almost entirely grown up since the time when lord Mansfield became the chief-justice of England (1756). The name of the *common law*, which is thus given to this collection of maxims and customs in England, Blackstone (1 *Bl. Comm.* 67) says, was either given to it in contradistinction to other laws, as the statute law, the civil law, the law merchant, and the like; or, more probably, as a law common to the realm (*jus commune*, or *folk-right*), mentioned by king Edward the Elder, after the abolition of the several provincial customs and particular laws by king Alfred and his successors. But though it is called the *lex non scripta* (or *unwritten law*), we are not to imagine that it is, at present, merely oral, and transmitted, from age to age, by word of mouth. In the dark ages, indeed, amidst the general ignorance of the times, few laws were reduced to writing; and still fewer of these maxims and customs were to be found in books or manuscripts. But (as Blackstone has observed, 1 *Bl. Comm.* 63) with us, at present, the monuments and evidences of our legal customs are contained in the records of the several courts of justice, in books of reports and judicial decisions, and in the treatises of learned sages of the profession, preserved and handed down to us from times of the highest antiquity. They are, however, still styled the *unwritten law*, because they are not set down in a code, as acts of parliament are, in writing, but they derive their authority from long and immemorial usage, and the universal recognition of them throughout the realm. The origin of this common law is now lost in remote antiquity. It probably began in the early customs of the aboriginal Britons, and was successively augmented, in different ages, by the admixture of some of the laws and usages of the Romans, the Picts, the Saxons, the Danes, and the Normans, who spread themselves over the country. It was feeble and narrow at first; but, expanding with the exigencies of society and with the progress of knowledge and refinement, it has now become a very complex and intricate system, and presents a singular combination of the strict principles of the old feudal law, with the elegant reasoning of public and commercial jurisprudence, which are so much admired for their general equity. Of such a gradual formation and expansion is, doubtless, the law of most civilized countries. The Roman or civil law is made up, not merely of the positive legislation of the senate and the people, and the edicts of the emperors, but also of the decrees of courts of justice, of the opinions of learned jurists, and of the silent but irresistible usages of the people in the arrangements of their business and domestic policy. These usages, at first voluntary and arbitrary, generally acquired the force of custom; and tradition made them operate as laws to regulate like concerns in other ages; and, as they were generally founded in public convenience, they were adhered to, first from habit, and at last from an

anxious desire, natural in all governments, to profit by the experience of the past, and to fix rights by some certain rules coinciding with the existing state of the people.

The common law is usually divided into three kinds:—1. General customs, which are the universal rule of the whole kingdom, and form the common law in its more usual signification; 2. Particular customs, which, for the most part, affect only the inhabitants of particular districts; 3. Certain particular laws, which, by custom, are adopted and used by some particular courts of pretty general and extensive jurisdiction. (1 *Bl. Comm.* 67.) The first embraces the general maxims and principles of English jurisprudence, such as the regulation of the descent of estates, the exposition of contracts and wills, the remedies for civil injuries, and the definition and punishment of crimes, &c. The second embraces the jurisprudence of a peculiar nature existing in certain local districts, such as the custom of gavelkind, in Kent county, where all the sons inherit the estate of their parent and not (as is the general law of England) the eldest son; so the custom of Borough English, where the youngest son inherits the estate; such, also, are the peculiar customs of the city of London. The third embraces those portions of the civil law and the canon law which are of force in the ecclesiastical and admiralty and other courts, and have long constituted the system which regulates the rights and remedies administered in those courts. This subject will be found discussed at large in 1 Bl. Comm. from p. 63 to p. 92, and in Lord Hale's History of the Common law. A further discussion here would occupy too much space.

The common law of England constitutes the general basis of the jurisprudence of all the United States of America, except only Louisiana, where the civil law prevails. This common law consists only of the first and third kinds of customary law above mentioned, there being no local or provincial law existing in any particular county or district of any state, as contradistinguished from that which prevails in the state at large. When we say that the common law constitutes the basis of American jurisprudence, we do not mean that the whole common law, as it exists in England, is adopted here. The general doctrine is, that such portions of the common law only as were adapted to the situation of the colonies at their first settlement, and were thenceafterwards used and recognized, are now of force in the states. But many portions were never in force at all in America. For instance, the ecclesiastical establishment, and much of the law growing out of it, was never introduced or recognized here. We, too, consider that all the statutes made in England before the emigration of our ancestors, which were in amendment of the law, and in melioration of it, constitute a part of our common law, and, as such, were brought hither by our ancestors, at their emigration. But statutes since enacted have no force at all here, unless they have been sanctioned by the legislature, or have been adopted into our local practice, by general usage, as amendments of the law. And, indeed, many of the fundamental principles of the common law have been altered, repealed, or modified by positive legislation of the various states, as well while they were colonies as since their independence; so that, though the general basis is the same, there are almost infinite shades of difference in the actual jurisprudence of the different states.

There is another sense in which we speak of the common law, in contradistinction to what is called *equity jurisprudence*. The administration of a distinct system of jurisprudence by distinct tribunals of this nature seems peculiar to Britain and the colonies which derive their origin from her. Blackstone (3 *Bl. Comm.* 50) has well observed, that the distinction between law and equity, as administered in different courts, is not at present known, nor seems ever to have been known in any other country at any other time; and yet the difference of one from the other, when administered by the same tribunal, was perfectly familiar to the Romans; the *jus prætorium*, or discretion of the prætor, being distinct from the *leges*, or standing laws. It would occupy too much space to enter into a full development of this distinction in the actual administration of justice in England. In general, courts of equity administer remedies *ex æquo et bono* only in cases where the courts of common law cannot administer an adequate remedy. Hence a very familiar expression is, that a right is an *equitable right*, or an *equity*; by which we mean, that it is a right recognized only in courts of equity, and for which the common law, in its ordinary tribunals affords no remedy, and of which it takes no notice. See *Courts* and *Equity*.

COMMON PLEAS. See *Courts*.

COMMON SCHOOLS. See *Schools*.

COMMONERS. See *Colleges*.

COMMONS. The commons of Great Britain, in a general sense, consist of all such men of property in the kingdom as have not seats in the house of lords, every one of whom has a voice in Parliament, either personally, or by his representatives. Commons, in parliament, are the lower house, consisting of knights elected by the counties, and of citizens and burgesses by the cities and borough towns. In these elections, anciently, all the people had votes; but in the 8th and 10th of king Henry VI., for avoiding tumults, laws were enacted, that none should vote for knights but such as were freeholders, did reside in the county, and had 40 shillings yearly revenue, equivalent to nearly £20 a-year of the present money; the persons elected for counties to be *milites notabiles*, at least esquires, or gentlemen fit for knighthood; native Englishmen, at least naturalized; and twenty-one years of age; no judge, sheriff, or ecclesiastical person to sit in the house for county, city, or borough. The house of commons, in Fortescue's time, who wrote during the reign of Henry VI., consisted of upwards of 300 members: in Sir Edward Coke's time, their number amounted to 493. At the time of the union with Scotland, in 1707, there were 513 members for England and Wales, to which 45 representatives for Scotland were added; so that the whole number of members amounted to 558. In consequence of the union with Ireland, in 1801, 100 members were added for that country; and the whole house of commons therefore consisted of 658 members. By the reform bill of 1832, the number of members was altered as follows: 500 for England and Wales, 53 for Scotland, and 105 for Ireland. See the article *Britain*, subdivision *Parliament*.

COMMONS, DOCTORS'. See *College of Civilians*.

COMMUNION. See *Lord's Supper*.

COMMUNITY. The two chief parties into which theoretical politicians of modern times are divided, approach each other in no point more nearly than in their opinion upon the organization of communities. For those who think that the state should insure an equality of rights to all its members, and those who believe that the common good of the whole is most safely attained by means of an unequal distribution of civil rights and privileges, both agree in this truth, that communities come next in order to private families, in the formation of the great bond by which mankind are united in church and state. They differ, indeed, in their views upon the formation of communities, and their relation to the general government,

as well as to their individual members, as widely as they do in their principles in regard to the state, and the claims of citizens upon it. History shows that the establishment of communities has been one of the greatest advances in human improvement; and they have proved, in different ages, the cradle and the support of freedom. By the formation of communities, the patriarchal or family government was broken, which arose from the natural connexion of families, but had terminated in most unnatural restraints and inequalities. In the family, individual interest predominated; and even when increasing numbers gave rise to tribes, the same motives still prevailed. The head of the tribe, the patriarch, was elevated to unrestrained authority. In after years all employments were distributed among the branches of the family by inheritance: then arose fixed castes—the grave of all human improvement; for their influence palsies individual effort; every man is shut up in one fixed circle, be his talents and accomplishments what they may. That the branch of the tribe which was originally predominant, viz., the caste of priests, or the priesthood, should, in the end, give way, and become inferior in influence to the second order (the military caste or rank), is so natural a consequence, that it has occurred in almost every instance of society constituted in the way which we have described, and is shown, with great probability, to have occurred, not only in Egypt and among the Hindoos, but in all the islands of the Indian ocean, in Japan, in the early ages of Greece and Rome, and among all people of Gaelic origin. Some writers, such as Eichhorn, for example, have thought, and with much reason, that they found traces of an original and hereditary superiority of the priesthood, in the relations of the ancient German priests to the military and other orders of society. This constitution of society, derived from family ties, with the institutions belonging to it,—a patriarchal government, a hereditary priesthood, and a fixed arrangement of castes,—existed among the earliest nations, and was probably the first form of government which went into operation upon the earth. With it was usually connected a common right of the whole tribe to the ground which they occupied. This was transferred to the head of the tribe, first as the common representative of the members, and for the purposes of fair distribution, but finally became the individual property of the chief. This is found to have been the case not only in Egypt and among the Hindoos, but also in the islands of the Indian ocean, and among the Scottish Highlanders, among whom, more especially, the old Gaelic constitution of tribes and family races has been preserved in their clans, even till a very late period. It will be easily perceived, that such a state of society must have been very oppressive to men of energetic, ambitious spirits, and, therefore, that emigrations would frequently occur; and, as bold adventurers from all castes would join the leaders of these expeditions, it is evident that the original divisions of the castes could as little be kept up among themselves, as they could be forced upon the foreign nations among whom the wanderers, by reason of their higher civilization or superior force, might obtain an influence. In the domestic history of Greece and Rome, we can discover a long-continued contest between the old family constitution of government, which gave particular races particular claims to sovereignty, and the rights of the community in general, which terminated, after many hard-fought battles, with the entire overthrow of the former. The first shock given to the old system took place almost contemporaneously, in Athens and Rome, by the substitution of divisions founded on property, in the room of the old divisions according to tribes and families. The removal from landed property of all restrictions in favour of families, and the equal inheritance of women, were among the most important consequences of this change in Rome.

Among the Germans, the system of communities, which was, from the beginning, the foundation of their political constitution, has remained essentially the same to the present time. The common people (*Gefolge*), who had voluntarily joined a certain leader, acknowledged him as their commander in war, but not as their sovereign in time of peace; as the defender of the laws, but not as their superior. All affairs of general interest, even to the determination upon a new campaign, were decided by the people themselves; and this custom was retained in all the states which they established, in which all the free members enjoyed equal rights. A hereditary distinction of ranks, in the earlier periods of these institutions, is neither certain nor probable. It is only possible, at the most, that some tribes, who had already possessed institutions recognizing these distinctions, may have transferred them to their new seats. The military associations were again subdivided into smaller portions, which were perhaps divided in the common military form, as the divisions into tens and hundreds were the only ones strictly observed; and, as new possessions were acquired, the new geographical and political divisions naturally took the form and title of *tithings*, *hundreds*, and *counties*. The free inhabitants of these societies were so far connected, that they were responsible one for the other. They had courts, and chose their own judges. This form of society continued nowhere so long as in England, although it is not entirely given up in any of the states of Germanic origin. The freemen of the county formed in England a particular community, whose head—the oldest *ealdorman*, *comes*, count or governor—was appointed by the king; but the second in command, the receiver of the royal taxes (*shire-gerefa*, *grave*, *graf*, *sheriff*, equivalent to the German *Schultheis*, exactor), was for some time elected by the people. The royal boroughs, which were scattered through the counties, were occupied by burgesses, who formed communities distinct from the tithings, consisted of freemen (nobles), and, like the counties, were represented at the assemblies convoked by the king. The lands which did not belong to the king, or were not given to his followers, seem originally to have been the property of the county, a part or lot in which belonged only to those capable of doing military duty, and constituted the common property; the *folk-land*, *allodial*, or *reeveland* of the Anglo-Saxons; the *salland* of the Franks; while the lords' property, or *thane-land*, or *book-land* of the Anglo-Saxons, was conferred only upon the followers of the king, or of the great territorial lords, upon condition of the performance of personal service. This last union of the king and the great lords with their vassals threatened the overthrow of the freedom of the communities, as all who were not thus dependent on the great were left without protection from violence; but, after the tenth century, the commons rose again, in consequence of the influence of several causes, partly from the wealth accumulated by the practice of arts and trades, partly from the growth of towns around the castles of the knights. In these towns, which had obtained their freedom, artisans of various sorts were collected, who were distinguished for spirit and boldness. It frequently happened, that, in the course of time, the knights—the original protectors of these communities—were expelled. In some cases, however, they became mingled in the mass of citizens. Many traces of this state of society are still to be found, especially in Britain, exhibit-

ed in the various constitutions of the cities and towns, and in the representation of boroughs in parliament. Only those towns which were in existence at the establishment of these Germanic institutions, or which remained as relics of the Roman and British times, owe their representation in parliament to their importance as towns. All other places hold their privileges as royal boroughs, which were originally the sole possessors of the corporate rights of towns. As these boroughs were created for the defence of the country, and the protection of the royal interests, we may see in this reason why they are so much more numerous in the frontier counties, and especially in Cornwall, than in other parts.

The formation and constitution of municipal communities, in other European states, has taken a nearly similar course, although the description of this course, as given by Eichhorn, is not of universal application. The *Burgwardeien*, which are found to have existed in Meissen and Brandenburg in the tenth century, are nearly related to the English boroughs, in like manner as the older towns and cities, which have remained as specimens of the Roman times and institutions, have served as models for towns of modern origin, and for the establishment of their city-privileges (*libertas Romana*). These municipal communities seem to have taken an important part in the representation of the country; in the establishment of which, the old notions respecting the character and rights of a community seem to have had as great or a greater share than the modern and most unjust notion of a representation of the landed interest. England is the only country in which the boroughs and the free possessors of landed estates have continued to form one body or chamber of representation—the commons—to which they have always belonged; while, in other countries, the gentlemen or knighthood have united themselves to the nobility, and thus become separated in their interests from the towns. But, in almost all parts of the European continent, the representatives of the towns appear to have lost much of their influence, to which various causes seem to have contributed. The most important among them has been the internal corruptions of the institutions of the towns themselves. The constitution of the German towns has generally suffered an injurious change, by the establishment of a chief magistrate for life, who has the power of appointing his inferiors in office, who are naturally selected from among his own friends and dependents. Though, in the large towns, the high and independent character of the burgesses, and their republican institutions, have been strong obstacles to these abuses, or the occasion of their being quickly corrected (as has been the case in all the imperial cities, and in the large towns of other countries); on the other hand, there has grown up, in the small towns, a contracted policy and cast of feeling, in accordance with the diminutiveness of their influence and importance, which has made them proverbial, in Germany, for narrowness of spirit. In this manner, all true public spirit has been lost. The mismanagement and corruption of the governments of the towns have destroyed their prosperity, and, with it, the old citizen spirit; and few towns are to be found in Germany, where just complaints are not heard of the corruption of old institutions, and the waste of the property of the place. These defects in the government of the towns, and the frequent contests between the burgesses and their magistrates, attracted the attention of government still more, from the fact that another branch of the popular authority—the administration of justice—had entirely departed from its original character. This portion of their authority had been wrested from the burgesses by the increasing subtleties of the law, and had passed into the hands of functionaries who were seldom able to command public confidence and respect; and the town-officers could, in truth, be no longer regarded as the agents of the municipality, even before they began, both in name and in reality, to assume the character and duties of state and police-officers. This occurred first in France, where the royal treasury was, for a short time, supplied by the sale of these offices. This example was followed by other states, especially in Germany, after the time of Frederic II. of Prussia, where it was first seen, that, upon every reform of the towns and their institutions, something valuable was taken from them, and sacrificed to the cause of absolute authority. In Prussia, an approach to a freer government of municipalities took place by the ordinance of Nov. 10, 1808, which has served as a model for several other German states, but, if carefully examined, will appear valuable only as demonstrating how necessary some approach to popular institutions is, even in an absolute monarchy. It is the work of the Prussian minister Stein. In republics, the organization of the municipalities, the establishment and due regulation of popular rights and privileges, is of the greatest importance. See the articles *City* and *Town*.

COMNENI; an extinct family of sovereigns, according to an unsupported tradition, of Italian origin, which numbered, on the throne of Constantinople (from 1057 to 1204) and on that of Trebisond (from 1204 to 1461), eighteen emperors, besides nineteen kings, and numerous independent princes. See *Byzantine Empire*, and *Trebisond*. When the crusaders had overturned the throne of the Comneni in Constantinople, and established the Latin empire there, in 1204, a prince of the ancient house of the Comneni founded an independent state at Trebisond, in Asia Minor, where he was governor. The last sovereign of this house was David Comnenus. From him, it is said, was descended Demetrius Comnenus, a French captain of dragoons, who died without children, at Paris, in 1821, with the title of *maréchal de camp*. But his descent cannot be historically traced. Ducange, an accurate, faithful, and learned historian, asserts, without hesitation, that Mohammed II., the conqueror of Constantinople, after he had obtained the empire of *Trebisond*, so called (which was scarcely as large as a French department), from the emperor David, by a treaty, sent for this prince and his seven children to Constantinople. In order to get possession of the income which had been secured to the Greek prince, he ordered him to be put to death, with all his children, at Adrianople, in 1462, under pretence of a conspiracy. This is confirmed, according to Ducange, by all contemporary writers—Chalcondylas, Ducas, Phranzes. A later historian maintains that one of his children was carried off unhurt to Laconia (Maina), where the family maintained a war with the Turks, generation after generation, for 200 years. Betrayed, but not conquered, Constantine Comnenus emigrated at last from Maina, landed, in 1676, at Genoa, accompanied by several Greeks, and planted a colony in the isle of Corsica. His posterity governed this district, inheriting the dignity and title of *capitano*; but, when Corsica was joined to France, they lost their possessions. This account, however, is not credible; for no mention whatever is made in contemporary history, either of a child of David Comnenus, or of his posterity, after 1462. Demetrius Comnenus, indeed, who pretended to be the last branch of the family of Corsican colonists (born in Corsica, in 1750), was recognized by the French government as a descendant of David Comnenus, by a royal decree of 1782, registered duly by the parliament; but this recognition was effected

by M. de Vergennes, merely from political motives. The fall of Constantinople was then supposed to be at hand, and it was for the interest of France to secure the claim of legitimate inheritance to a descendant of that family in France. If the sceptre of the grand seignior had then been broken, France would have supported the claims of the French officer; for, in the diploma of Louis XVI., he was recognised as the lawful successor of the emperors of Trebisond. Captain Demetrius Comnenus emigrated in the beginning of the revolution, fought under the banners of the prince of Condé, returned, in 1802, to France, and lived, till 1814, on a pension of 4000 francs, which Napoleon had assigned him. Louis XVIII. confirmed this stipend, and made him *marechal de camp*, and knight of St Louis. He died September 8, 1821, and left a manuscript work, in which he laboured to show that the Greeks had risen from a state of barbarism even before the time of Homer. A remarkable member of the family was the princess Anna Comnena, daughter of the emperor Alexius I., who flourished in the first half of the twelfth century. In the history of her father, whom she praises with all the affection shown by madame de Stael towards her parents, she gives a lively description of the manners of her age, and the state of the court of Constantinople. See Gibbon's *Roman Empire*. c. 48.

COMO, Lake (*lago di Como;* anciently *lacus Larius*); a lake in the Lombardo-Venetian kingdom, at the foot of the Alps. Towards the middle it is divided into two branches, by the point called *Bellaggio*. The branch extending towards the S.W., to the city of Como, goes under the same name: that which turns to the S.E., to Lecco, takes the name of *lake Lecco*. The length of the lake to Bellaggio is five leagues; that of the S.W. branch, six leagues; and that of the S.E. branch, four leagues. The greatest width is one league. More than sixty rivers and rivulets empty into it, and the Adda passes through it. It is about 700 feet above the level of the sea, and 191 feet above the territory of Milan. Lake Como, the most delightful of all the lakes at the foot of the Alps, is surrounded by mountains 8 or 9000 feet high, which descend towards the lake, and terminate in hills surrounding terraces. It is bordered by delightful gardens and country seats. Many delicious fish, particularly trouts, are taken in the lake. The neighbouring country is rich in minerals, iron, copper, and lead.

COMO (anciently *Comum*); capital of the province of Como, in the Lombardo-Venetian kingdom, nine leagues N.N.W. of Milan, in a delightful valley on lake Como (q.v.); lat. 45° 48′ 20″ N.; lon. 9° 5′ 12″ E. It is a bishop's see. The number of the inhabitants is about 7500, many of whom travel about with little manufactures, such as mirrors, spectacles, little pictures. Even in the time of the Roman emperors, this taste for emigration manifested itself. The inhabitants of Como were then to be found in all parts of Italy, in the capacity of masons. This city contains some antiquities, and twelve beautiful churches; also a cabinet of natural history and natural philosophy. The eleventh and twelfth centuries were the flourishing period of Como. It was then at the head of the Ghibeline party, and the rival of Milan. The *province* of Como, which constituted the department of Lario, in the kingdom of Italy, includes 315,634 inhabitants, in 539 communities.

COMORO, or COMMORRO, or GOMARA ISLANDS; islands in the Indian ocean, between the northern extremity of Madagascar and the continent of Africa. They are four in number—*Angareja* (called also *Comoro*), *Mohilla*, *Johanna*, and *Mayotta*. The inhabitants are uncivilized, but harmless. Europeans have never formed settlements there. These islands are extremely fertile, well stocked with cattle, sheep, hogs, and birds of various kinds. They produce, likewise, sweet and sour oranges, citrons, bananas, honey, sugar-canes, rice, ginger, cocoa-nuts, &c. They are situated between lat. 11° 20′ and 13° 5′ S., and lon. 43° 10′ and 45° 30′ E. The population, consisting of negroes and Arabs, is estimated at 20,000.

COMPANY, in military language; a small body of foot or artillery, the number of which varies, but, in the British army, is generally from 50 to 120, commanded by a captain, a lieutenant, and an ensign, and sometimes, by a first and second lieutenant, as in the artillery and flank companies of the line. In the Austrian and Prussian armies, companies are stronger. In France, the strength of a company has varied very much. In former times a company consisted of from 25, 30, 40, up to 200 men; in 1793, of 80 men; in 1808, they had 137 men; in 1814, 72 men; in 1823, 80 men. In 1820, a French battalion was composed of eight companies, and a regiment of three battalions.

COMPANIES, Joint Stock. See *Joint Stock Companies*.

COMPARATIVE ANATOMY is the science which investigates the anatomy of all animals with the view to compare them, to explain one by means of the others, and to classify the various kinds, according to their anatomical structure. As comparison, and the formation and extension of genera and species, are the delight of the naturalist, comparative anatomy is one of the most interesting sciences. The want of an organ in certain classes of animals, or its existence, under different modifications of form, structure, &c., cannot fail to suggest interesting conclusions concerning the office of the same part in the human subject. Thus comparative anatomy is of the highest importance to physiology. Haller observes, very justly, "Physiology has been more illustrated by comparative anatomy than by the dissection of the human body." Without comparative anatomy, the natural history of animals would always have remained in a backward state, more so even than mineralogy without the aid of chemistry. And it is to comparative anatomy that we owe, in a great measure, that more liberal view of nature, which belongs to modern times, and considers all nature, man included, as one unbroken whole. Cuvier's *Leçons d' Anatomie comparée* (in 5 large 8vo. volumes), is an excellent work. Blumenbach's works on comparative anatomy, also, are highly valuable. His *Handbuch der vergleichenden Anatomie und Physiologie* (Gottingen, 1804), has been translated by Mr Lawrence, under the title of a *Short System of Comparative Anatomy* (London, 1807—1808, 8vo.) Gall has rendered great service to science, by investigations in comparative anatomy, though he has sometimes fallen into extravagant conclusions in reference to phrenology.

COMPASS, The Mariner's. The ancients, whose only guides on the trackless waters were the heavenly bodies, so often covered by clouds, could not venture far from shore. It is the compass which has enabled men to steer boldly across the deep. The inventor of this great instrument shares the fate of the authors of many of the noblest inventions. He cannot be precisely ascertained. Some call him Flavio Gioja; others Giri, a native of Amalfi, in Naples, at the beginning of the fourteenth century; but there are proofs, that the use of the magnetic needle, in pointing out the north, was known at an earlier period in Europe, and that a contrivance similar to a compass went under the name of *marinette*

in France, as early as the twelfth century. The British first suspended the compass, so as to enable it to retain always a horizontal position, and the Dutch gave names to the divisions of the card. The earliest missionaries to China found the magnetic needle in use in that country.

The compass is composed essentially of a magnetic needle, suspended freely on a pivot, and containing a card, marked with the thirty-two points of direction into which the horizon is divided, and which are thence called *points of the compass*. The needle always points to the north (excepting slight variations), and the direction which the ship is steering is therefore determined by a mere inspection of the card. This apparatus is enclosed in a brass box, with a glass covering, to allow the card to be seen without being disturbed by the wind. This again is freely suspended within a larger box, so as to prevent, as much as possible, the needle from being affected by the motion of the vessel. The whole is then placed in the binnacle in sight of the man at the helm. On the inside of that part of the compass-box which is directly on a line with the vessel's bow, is a clear black stroke, called the *lubber-line*, which the steersman uses to keep his required course; that is, he must always keep the point of the card, which indicates his course, coinciding with the lubber-line. The compass here described is called the *steering compass*. Several other sorts are used for different purposes, but the principle on which they are constructed is the same. Some land compasses are of the size of a watch-seal, and actually fixed in such seals; others of the size and external form of a pocket watch. Sometimes a little sundial is affixed to compass-boxes. The box, of whatever material it is made, must have no particle of iron in its construction. See *Magnetism* and *Navigation*.

COMPASSES, or PAIR OF COMPASSES; a mathematical instrument, used for the describing of circles, measuring lines, &c. The common compasses consist of two branches or legs of iron, brass, or other metal, pointed at bottom, and joined by a rivet, whereon they move as on a centre. We have compasses of various kinds, and contrivances accommodated to the various uses for which they are intended.

COMPIEGNE; a French town, in the department *de l'Oise*, 15¾ leagues N. N. E. of Paris. It has 6260 inhabitants, crooked streets and ill built houses, and some manufactures and commerce. Formerly, it was supported only by the court, which occasionally resided here. It has two fairs, one in April, and one in November. Charles VI. took this town from the duke of Burgundy in 1415. In 1430, Joan of Arc was taken prisoner here by the English.

COMPLEXION. The human skin, till the time of Malpighi, was supposed to consist only of two parts —the cuticle, epidermis or scarf-skin, and the cutis or real skin; but that anatomist, about the middle of the seventeenth century, discovered between these a cellular texture, soft and gelatinous, to which the names of *rete muscosum* and *corpus reticulare* have been given. He demonstrated the existence of this membrane, at first in the tongue, and in the inner parts of the hands and feet; but, by his subsequent labours, and also by those of Ruysch and other anatomists, it has been proved to exist, between the epidermis and cutis, in all parts of the human body. Malpighi, on the discovery of this membrane, offered a conjecture respecting the cause of the colour of negroes. He supposed that this membrane contained a juice or fluid of a black colour, from which their blackness arose. The actual existence of a black pigment has been since ascertained, but has never been procured in sufficient quantity to admit of minute and analytical examination. The *rete muscosum* is of very different colours in different nations; and the difference of its colour so completely agrees with the difference of their complexions, that there can be no doubt that it is the sole, or, at least, the principal, seat of the colour of the human complexion. Its thickness varies in different parts of the body; and the depth of its colour, for the most part, is in proportion to its thickness. The black colour of the negroes is destroyed by several causes; indeed, whatever destroys the *rete moscosum* destroys it, as wounds, burns, &c.; and, as this membrane is never reproduced, the scar remains white ever afterwards. Hawkins (in his Travels into the Interior of Africa, p. 120) mentions that the land-cloud of Africa, called, by the Portuguese, *ferrino*, changes the black colour of the negroes into a dusky grey; according to some other authors, the change is into a red copper colour. At Darfur a species of leprosy prevails among the natives, which they call *borras*, and which gives them the appearance of being piebald, changing to a white colour parts both of their skin and their hair. There are, also, several instances of the colour of negroes being either entirely or partially changed, from the operation of causes which cannot be detected or explained. A boy, who was born in Virginia, of black parents, continued of his native colour till he was three years old: at that period, a change of colour began to take place, though the health of the boy continued good, and there was no assignable cause for the alteration, in his food or mode of life. At first, white specks made their appearance on his neck and breast, which soon increased in number and size; from the upper part of his neck down to his knees, he was completely dappled; his hair was also changed, but not to the same degree, since, though some parts of it were white, in general it retained the black colour and crispature of the negro. The colour of those parts of his body which had undergone the change was of a more livid white than is found among the fairest Europeans; nor did the flesh and blood appear through these parts of his skin so clear and lively as through the skin of white people. He was not liable to be tanned.—*Philosophical Transactions* (vol. xix. p. 781). For the classification of the varieties of the human complexion, see the article *Man*; see also *Facial Angle*.

The nature and colour of the hair seem closely connected with the complexion. In proportion to the thinness of the skin, and the fairness of the complexion, the hair is soft, fine, and of a white colour: this observation holds good, not only in the great varieties of the human race, but also in the Albinos. Next to them, in fairness of complexion, is the Gothic race, the *rutilæ comæ* of whom were a distinguishing characteristic, even in the time of the Romans. The Celtic tribes are not so fair as the Gothic, and their hair is darker and more inclined to curl; so that the observation which Tacitus makes respecting the Silures still applies to them—*Colorati vultus, torti crines*. But, though the colour of the hair is evidently connected with the complexion, yet its tendency to curl does not appear to be so. The brown complexioned Celts have curled hair; the Mongolian and American varieties, of a much darker complexion, have hair of a darker colour, but long and straight. Among that portion of the Malay variety which inhabits the South sea islands, soft and curled hair is frequently met with. The colour of the eye is also connected with the complexion. In the Africans, professor Sommering remarks that the *tunica adnata*, or white of the eye, is not so resplendently white as in Europeans, but rather of a yellowish-brown, something similar to what occurs in the jaundice. The iris, in the negroes, in general, is of a very

dark colour; but, according to Pigafetta, the iris in the Congo negro is frequently of a bluish tinge; and it is worthy of remark that, according to this author, these negroes have not the thick lips of the Nubians. The Gothic tribes are not more distinguished by their fair complexion than by their blue eyes (*cærulei oculi*), while the iris of the darker coloured Finn, according to Linnæus, is brown, and that of the still darker Laplander, black. The colour of the eyes also follows, in a great degree, in its changes, the variations produced by age in the complexion. Blumenbach informs us that newly-born children, in Germany, have, generally, blue eyes and light hair, both of which become gradually of a darker hue, as the complexion of the individual grows darker; and Ligon, in his True and Exact History of Barbadoes (p. 52), says that the children of the negroes there, when they are born, "have the sight of their eyes of a bluish colour, not unlike the eyes of a young kitten; but, as they grow older, they become black." The most singular race of men, in point of complexion, are the Albinos. (See *Albinos*.) A middle complexion is produced where children are born from parents of different races. If the offspring of the darkest African, and the fairest European intermarry successively with Europeans, in the fourth generation they become white; when the circumstances are reversed, the result is reversed also. Along with the successive changes of complexion is also produced a change in the nature and colour of the hair; though, in some instances, the woolly hair remains when the complexion has become nearly as fair as that of brown people in Europe. It does not, however, always happen that the offspring is the intermediate colour between that of the respective races to which the father and mother belong; it sometimes resembles one parent only, while, perhaps, in the second or third generation, the colour of the other parent makes its appearance. White, On the Regular Gradation of Man, mentions a negress who had twins by an Englishman: one was perfectly black; its hair was short, woolly, and curled: the other was white, with hair resembling that of an European. And Parsons, in the Philosophical Transactions, gives an account of a black man who married an English woman: the child, the offspring of this marriage, was quite black. The same author gives another instance, still more remarkable: a black, in Gray's Inn, married a white woman, who bore him a daughter, resembling the mother in features, and as fair in all respects, except that the right buttock and thigh were as black as the father's. —*Philosophical Transactions* (vol. i., p. 45).

The generally-received opinion, concerning the varieties of complexion, which are found in the different races of man throughout the globe, is, that they are caused entirely by the influence of climate. Respecting the primary colour of man, the supporters of this opinion are not agreed. The opinion that climate alone will account for the various complexions of mankind is very plausible, and supported by the well-known facts, that in Europe the complexion grows darker as the climate becomes warmer; that the complexion of the French is darker than that of the Germans, while the natives of the south of France and Germany are darker than those of the north; that the Italians and Spaniards are darker than the French, and the natives of the south of Italy and Spain darker than those in the north. The complexion, also, of the people of Africa, and the East Indies, is brought forward in support of this opinion; and from these, and similar facts, the broad and general conclusion is drawn, that the complexion varies in darkness as the heat of the climate increases; and that, therefore, climate alone has produced this variety. But it can be shown that the exceptions to this general rule are very numerous; that people of dark complexions are found in the coldest climates, people of fair complexions in warm climates, people of the same complexion throughout a great diversity of climate, and races differing materially in complexion among the same people.

1. In the coldest climates of Europe, Asia, and America, we find races of a very dark complexion. The Laplanders have short, black, coarse hair; their skins are swarthy, and the irides of their eyes are black. According to Crantz, the Greenlanders have small, black eyes; their body is dark-grey all over; their face brown or olive; and their hair coal black.—Crantz's *History of Greenland* (i., 132.)

The complexion of the Samoides, and the other tribes who inhabit the north of Asia, and of the Esquimaux, is very similar to that of the Laplanders and Greenlanders. Humboldt's observations on the South American Indians illustrate and confirm the same fact. If climate rendered the complexion of such of these Indians as live under the torrid zone, in the warm and sheltered valleys, of a dark hue, it ought, also, to render, or preserve fair, the complexion of such as inhabit the mountainous part of that country; for, certainly, in point of climate, there must be as much difference between the heat of the valleys and of the mountains in South America as there is between the temperature of southern and northern Europe; and yet this author expressly assures us, "that the Indians of the torrid zone, who inhabit the most elevated plains of the Cordillera of the Andes, and those who, under the forty-fifth degree of south latitude, live by fishing among the islands of the archipelago of Chonos, have as coppery a complexion as those who, under a burning climate, cultivate bananas in the narrowest and deepest valleys of the equinoctial region.—*Political Essay on the Kingdom of New Spain* (i. 14, &c.).—He adds, indeed, that the Indians of the mountains are clothed, but he never could observe that those parts which were covered were less dark than those which were exposed to the air. The inhabitants, also, of Terra del Fuego, one of the coldest climates in the world, have dark complexions and hair.

2. Fair-complexioned races are found in hot climates. Ulloa informs us that the heat of Guayaquil is greater than at Carthagena; and, by experiment, he ascertained the heat of the latter place to be greater than the heat of the hottest day at Paris; and yet, in Guayaquil, "notwithstanding the heat of the climate, its natives are not tawny:" indeed, they are "so fresh-coloured, and so finely-featured, as justly to be styled the handsomest, both in the province of Quito, and even in all Peru."—*Ulloa* (i., 171).—"In the forests of Guiana, especially near the sources of the Orinoco, are several tribes of a whitish complexion,—the Guiacas, the Guagaribs, and Arigues,—of whom several robust individuals, exhibiting no symptom of the asthenical malady which characterizes Albinos, have the appearance of true Mestizos. Yet these tribes have never mingled with Europeans, and are surrounded with other tribes of a dark-brown hue." The inhabitants of Boroa, a tribe in the heart of Araucania, are white, and, in their features and complexion, very like Europeans. Even in Africa, darkness of complexion does not increase with the heat of the climate in all instances: the existence of comparatively fair races in this quarter of the globe is noticed by Ebn Haukal, an Arabian traveller of the tenth century, and has been confirmed by subsequent travellers.

3. The same complexion is found over immense tracts of country, comprehending all possible varie-

ties of climate. The most striking and decisive instance of this is on the continent of America; all the inhabitants of which, with the exception of the Esquimaux, exhibit the copper-coloured skin, and the long and straight black hair. New Holland is an instance of a similar nature, though on a less extensive scale: over the whole of the island, even in the very cold climate of the southern parts, the complexion of its inhabitants is of a deep black, and their hair is curled like that of negroes.

4. Different complexions are found under the same physical latitude, and among the same people. Illustrations and proofs of this have already been given. The physical latitude in which the Norwegians, the Icelanders, the Finns, and the Laplanders live, scarcely differs; and yet their complexions, and the colour of their eyes and hair, are widely different. There is a great diversity of colour and features among the Morlachi, who inhabit Dalmatia. The inhabitants of Kotar, and of the plains of Seigu, and Knin, have fair blue eyes, broad face, and flat nose. Those of Duare and Vergoraz, on the contrary, have dark-coloured hair; their face is long, their complexion tawny, and their stature tall.—Fortis's *Travels in Dalmatia* (p. 51).—M. Sauchez, who travelled among the Tartars in the southern provinces of Russia, describes a nation, called the Kabendedski, as having countenances as white and fresh as any in Europe, with large black eyes.—Smellie's *Philosophy of Natural History* (ii., p. 167).—The inhabitants in the neighbourhood of the cape of Good Hope differ in their complexions much more than in the nature of the climate under which they respectively live. The Caffres are black; the Bushwanas of a bronze colour; and the Hottentots a light brown, or brownish-yellow. In the island of Madagascar there are three races, distinctly marked. The first are black, with frizzled hair, supposed to be the original inhabitants of the island. The second race inhabit the interior provinces: they are tawny, and have long hair, like the Malays. The third race reside near Fort Daupliris, and on the west coast: they are supposed to be descended from some shipwrecked Arabs, and retain a resemblance to that nation.—Sonnerat's *Voyages to the East Indies and China* (translated from the French, iii. p. 30).

People with the negro complexion and features are also found in the interior of the Philippine islands; and in Java, the Hindoo and Malay character may be clearly traced in the complexion and features of the two classes of inhabitants which are found in that island. In several of the Moluccas is a race of men who are blacker than the rest, with woolly hair, inhabiting the interior hilly parts of the country. The shores of these islands are peopled by another nation, whose individuals are swarthy, with curled long hair. In the interior hilly parts of Formosa, the inhabitants are brown, frizzle-haired, and broad-faced, while the Chinese occupy the shores.

Forster observes that there are two great varieties of people in the South seas; the one more fair, the other blacker, with their hair just beginning to be woolly and crisp. The first race inhabits Otaheite and the Society isles, the Marquesas, the Friendly isles, Easter island, and New Zealand; the second race peoples New Caledonia, Tanna, and the New Hebrides, especially Mallicolo. If we examine the relative situation and latitudes of these islands on a map, we shall be convinced, not only that darker complexioned people are found where the climate is comparatively colder, but that the same complexion is found under very different latitudes. It is not meant to be denied that a burning climate will render the complexion very dark, and that a climate of less extreme heat will bronze the complexion of the fairest European; but there are some material points, in which the dark complexion of the Caucasian, or naturally fair-skinned variety of mankind, caused by climate, differs from the dark complexion of all the other varieties of the human race.

1. The offspring of the Caucasian variety is born fair; the offspring of the other varieties is born of the respective complexion of their parents. Ulloa informs us that the children born in Guayaquil of Spanish parents are very fair.—*Ulloa* (i., 171).—The same is the case in the West Indies. Long, in his History of Jamaica, expressly affirms, "that the children born in England have not, in general, lovelier or more transparent skins than the offspring of white parents in Jamaica." But it may be urged, that this is not the case with respect to the other nations of the Caucasian variety, who have been settled in warm climates from time immemorial, and that the question ought to be decided by the Moors, Arabians, &c. Their children, however, are also born fair-complexioned, as fair as the children of Europeans, who live under a cold climate. Russell informs us that the inhabitants of the country round Aleppo are naturally of a fair complexion, and that women of condition, with proper care, preserve their fair complexion to the last.—Russell's *Aleppo* (i., 99).—The children of the Moors, according to Shaw, have the finest complexions of any nation whatsoever; and the testimony of Poiret is directly to the same effect: —"The Moors are not naturally black, but are born fair, and when not exposed to the heat of the sun, remain fair during their lives.—*Shaw* (p. 304); and Poiret's *Voyage en Barbarie* (i., 31).

2. Individuals belonging to the Caucasian variety, that inhabit warm countries, preserve their native fairness of complexion if they are not exposed to the influence of the climate; while there is a uniform black colour over all the parts of a negro's body. The hue which Europeans assume is the same, though the tinge may be lighter or darker, whether they settle in Africa, the East Indies, or South America. They do not become, like the natives of those countries, black, olive-coloured, or copper-coloured; their complexion merely resembles that of a tanned person in this country, only of a darker tinge. The negroes that are settled in the West Indies, or America, do not assume the copper colour of the Indians, even though a milder climate may have some effect on the darkness of their complexions. The children of Europeans, of negroes, and of Indians, are all born, in America, of the same reddish hue; but, in a few days, those of the negro begin to assume the black complexion of their parents, those of the Indian the copper complexion, while those of the European either continue fair, if kept from the influence of the sun, or become tanned; not black like the negro, or copper-coloured like the Indian, if exposed to its influence. Europeans who settle in Canada, or in the northern parts of America, where the climate resembles that of their native country, do not assume the complexion of the Indians, but continue fair like their ancestors. The same observation may be made respecting the Russians, who are settled among the Mongolian variety, in those parts of the Russian empire in Asia, the climate of which resembles the middle or northern parts of European Russia. Indeed, the wide extent of country over which the Mongolian variety is spread, including the extreme cold of Lapland, and the north of Asia, the mild temperature of the middle parts of that continent, and the warmth of the southern parts of China, is, in itself, a proof that dark complexion does not arise either from the influence of heat or cold.

Lastly, radical varieties of complexion are always accompanied with radical varieties of features. We

do not find the olive colour of the Mongolian variety with the features of the Malay; nor the brown colour of the Malay with the features of the Mongolian; nor the black skin of the Ethiopian variety, or the red colour of the American, united with any set of features but those which characterize their respective varieties. It, however, by no means follows that the hypothesis of different races having been originally formed, must be adopted, because climate is not adequate to the production of the radical varieties of complexion which are found among mankind. Man, as well as animals, has a propensity to form natural varieties

COMPLUTENSIAN POLYGLOT. See *Alcala de Henares*.

COMPOSITE ORDER. See *Architecture*.

COMPOST, in husbandry and gardening; several sorts of soils, or kinds of earthy matter mixed together; or a mixture of earth and putrid animal substance, or vegetable substance; in fact, any artificial manure to assist the soil in the work of vegetation. See *Colonies, pauper*.

COMPOSTELLA, or SAN JAGO DE COMPOSTELLA (anciently *Brigantium*); a city of Spain, and capital of Galicia, ninety-eight miles W. of Astorga; lon. 8° 30′ W.; lat. 42° 52′ N.; population, about 12,000. It is situated in a beautiful plain, on all sides surrounded with agreeable hills, between the Sar and Sarella, which unite about half a league below. It is the see of an archbishop. In the metropolitan church are preserved, as the people believe, the remains of St James, the patron of Spain, to whom the church is dedicated, and from whom the town is named. There are twelve parish churches, fourteen religious houses, and four hospitals. The annual revenue of the archbishop is said to amount to 60,000 ducats. A university was established here in the year 1532, consisting of four colleges. The order of St Jago takes its title from this city, the knights of which possess eighty-seven commanderies, with an annual income of 200,000 ducats.

COMPOSTELLA, Nuova; a town of Mexico in Guadalaxara, built by Nunez de Guzman, once the see of a bishop, removed to Guadalaxara) 300 miles W. N. W. Mexico; lon. 106° 11′ W.; lat. 21° 20′ N. There are silver mines in the neighbourhood.

COMPOUND BLOWPIPE; an instrument producing an intense heat from the combustion of oxygen and hydrogen gases. The gases are contained each in a separate gas-holder, and are expelled by the pressure of a column of water, not being allowed to mix until they arrive nearly at the aperture of a pipe tipped with platina, when they are inflamed. The heat produced is sufficient to melt all the earths, and the natural as well as artificial compounds which they form with each other. The metals, also, are brought by it into a state of ebullition, and are even completely volatilized.—This modification of the *oxyhydrogen blowpipe*, as it has sometimes been called, which was invented by doctor Hare, of Philadelphia, is far preferable to that of Newman, or rather of Brooke, who appears to have been the first inventor, since it is not attended by any danger, whereas the original instrument, in which the gases were previously mingled, was liable to a violent and hazardous explosion. The compound blowpipe has been found of occasional use in the arts, where an intense and long-continued heat is required.

COMPRESSIBILITY; the quality of bodies of being reducible, by sufficient power, to a narrower space, in consequence of their porosity, without diminishing their quantity of matter. All bodies are probably compressible, though the liquids, in particular, offer an almost invincible resistance to compression. Those bodies which occupy their former space, when the pressure is removed, are called *elastic*.

COMPRESSION MACHINES; instruments for compressing or condensing elastic fluids. Such, for instance, is an air-pump with cocks, by which the air can be condensed in tight vessels. For the compression of liquids (for instance, water), Abich has constructed a metallic cylinder of twenty inches five and ten-twelfth lines high, three and a half inches seven and a half lines in diameter, one inch, two and a half lines thick. This cylinder is filled with water, and an iron piston, covered with leather, and, exactly fitting the bore, is pressed into it. For this pressure, a screw was first used; but, in order to produce a better application of the power, a lever was afterwards employed to force down the piston. A mark on the piston shows, by its distance from a little ledge across the cylinder, how far the piston has been forced down, and, when the force subsides, how far it has been driven up. See Zimmerman on the *Elasticity of Water*, Leipsic, 1779. The latest experiments on the compressibility of water, we owe to Oersted (*Annales de Chimie et de Physique*) and Mr Perkins, so distinguished for his mechanical invention.

COMUS (from the *Greek*); the name of a merry company of young people, who came singing into the houses of their friends and mistresses, to entertain them with their music. *Comus* was also the name of the songs sung at festive entertainments. This name is not given, by early ancient writers, whose works have been preserved, to a divinity presiding over such meetings, who is a creation of later times, which gave him the name of the festive songs in which were celebrated the praises of the giver of social joys He is first mentioned by Philostratus.

CONCAVE. See *Convex*.

CONCAVE LENS; an epithet for glasses ground hollow on the inside, so as to reflect on the hollow side.

CONCENTRATION (in Chemistry); the act of increasing the strength of fluids, by volatilizing part of their water.

CONCENTRIC; an epithet for figures having one common centre.

CONCEPTION, Immaculate. The belief is entertained in the Roman Catholic church, that the virgin Mary was born without the stain of original sin. St Bernard, in the twelfth century, rejected this doctrine, in opposition to the canons of Lyons, and it afterwards became a subject of vehement controversy between the Scotists and the Thomists. The Dominicans espoused the opinion of St Thomas, the Franciscans that of Scotus. Sixtus IV., himself a Franciscan, allowed toleration on this point. In the fifth session of the council of Trent, it was resolved, that the doctrine of the conception of all men in original sin was not intended to include the Virgin. The controversy was revived in the university of Paris towards the close of the sixteenth century. During the times of Paul V. and Gregory XV., such was the dissension in Spain, that both Philip and his successor sent special embassies to Rome, in the vain hope that this contest might be terminated by a bull. The dispute continued to run so high in Spain, that, in the military orders of St James, of the Sword, of Calatrava, and of Alcantara, the knights, on their admission, vowed to maintain the doctrine. In 1708, Clement XI. appointed a festival to be celebrated throughout the church in honour of the immaculate conception. Since that time, it has been received in the Roman church as an opinion, but not as an article of faith. This belief is held by the Greek church also, which celebrates the feast under the title of the *conception of St Anne*. Petrus de Alva et Astorga pub-

lished more than forty volumes on this subject. He died in 1667.

CONCEPTION, LA, or PENCO; a city and seaport of Chile, on the coast of the South Pacific ocean, capital of a jurisdiction, formerly the capital of Chile; lon. 73° 5′ W.; lat. 36° 49′ 10″ S.; population, 13,000. The bay of Conception is one of the most commodious harbours found in any part of the world. The city is of great extent, because the houses are built only one story high, that they may be the better able to resist the earthquakes that happen every year. It is the residence of the bishop, and of the major-general, who is at the head of the military department. Conception was founded by Peter Valdivia, in 1550. In 1823 the Indians devastated a part of it.—There is not in the universe a soil more fertile than that of this part of Chile. Grain yields sixty for one; the vineyards are equally productive, and the plains are covered with innumerable flocks, which multiply astonishingly, though abandoned entirely to themselves. All the inhabitants have to do is to set up fences round their respective possessions, and to leave the oxen, horses, mules, and sheep in the enclosures. The common price of a fat ox is eight dollars; that of a sheep three-fourths of a dollar; but there are few purchasers, and the natives are accustomed, every year, to kill a great number of oxen, of which the hides and tallow are alone preserved, and sent to Lima. There is no particular disease incident to this country. There are at Conception several persons who have completed a century.

CONCERT; a musical performance, in which any number of practical musicians, either vocal or instrumental, or both, unite in the exercise of their respective talents. The concerts of the ancient Greeks were executed only in the unison or octave.

CONCERTO; a kind of musical composition, which is an imitation of the solo song with accompaniments—in short, an imitation of the *aria*. In the concerto, one chief instrumeut is distinguished, and leads the rest. In the case of such concertos, the performance is called after this instrument, or it is called, in general, *concerto di camera*. The term *double concerto* is used if there are two chief instruments.

Concerto grosso is an expression applied to the great or grand chorus of the concert, or to those places of the concert in which the *ripienos* and every auxiliary instrument are brought into action, for the sake of contrast and to increase the effect.

Concerto spirituale was a concert at Paris, performed in the religious seasons, when the theatres were closed. The pieces performed, however, were not always of a spiritual kind. It was introduced in 1725, by Anne Danican, called *Philidor*.

CONCETTI; sparkling but strained sentences, far-fetched plays on words, &c., which have become famous, in particular since the use of them by the Italian poet Marino. The taste for them is a disease which has manifested itself in the development of almost all literatures. The Spaniards and British suffered from it for a long time. Marino, who introduced them into Italy, caught this poetical infection in France, where a poet called the wind the *courier of Æolus*, the sun the *prince of tapers*. Germany has had its Lohenstein; and, even now, there are, in every country, writers afflicted with this passion for a false brilliancy.

CONCHOLOGY (derived from κόγχη, a shell-fish with two shells, and λόγος, word), more correctly, Conchyliology (derived from κογχύλιον, all sorts of shell-fish, and λόγος), is that branch of natural history which describes those animals which produce shells, and teaches the art of arranging the shells themselves.

The beginnings of this science are to be found in the writings of Aristotle, who established some of those divisions which are in use among modern authors. He divided shells into *monothyra* and *dithyra*; that is, *univalves* and *bivalves*. The *monothyra* were turbinated, or not turbinated; they were terrestrial or aquatic; both were marine or fluviatile, fixed or free. To the facts recorded by Aristotle, other ancient authors have added little; to his distribution, nothing. The first modern author who attempted a systematic arrangement of shells, seems to have been Daniel Major, who, in 1675, published Synoptical Tables, containing a few Genera, naturally arranged, and established upon the species described by Fabricius Columna. He divided shells into *univalves* and *multivalves*, placing the bivalves among the latter. In 1681, Grew, in his *Musæum Regium*, added a division analogous to our bivalves, and indicated most of the subdivisions that have since obtained. About 1687, the celebrated Lister published his *Historiæ sive Synopsis Methodicæ Conchyliorum, Libri quatuor*. This work contains a great number of accurate figures of shells, pays great attention to the hinge of bivalves, and considers them as equivalve or not. Tournefort, who died in 1708, seems to have first suggested, in bivalves, the distinction of *close* or *gaping* (*clausæ vel hiantes*). In 1711, Rumph added to the conchyliological catalogue many shells from the Indian seas, and indicated some good generic divisions. In 1730, Breyn pointed out a character in univalves, until then not noticed; namely, that some of them possess more than one compartment or chamber. This character divides the univalves into *monothalamia* and *polythalamia*. After 1730, no improvements of much value were made in the science, until 1757, in which year the publication of Adanson's Voyage to Senegal took place, and probably suggested many considerations, that became fixed principles of conchyliology by the adoption of Linnæus. In studying the univalves (*limaçons*), Adanson considered the spire, the apex, the aperture, the operculum, the nacre, the periosteum; in the bivalves (*conques*), the valves, whether equal or unequal, whether shutting close or gaping; the beaks (*sommets*), whether prominent or not, and according to their relative position with respect to the middle of the valve; the hinge, according to the number of the teeth and cavities; the ligament, according to its shape and situation; the muscles, according to their figure, size, and number. In forming his conchyliological arrangement, Adanson adopted an important principle, which Guettard had suggested one year before, namely, that the consideration of the animal is as necessary as that of the shell, in order to form a natural system of conchyliology. He described and figured the different species of shell-fish that he found in Senegal, and thereby formed a store from which the most valuable materials have been drawn by later authors to enrich the science.

Contemporary with Adanson was the celebrated Linnæus, whose genius has exercised such great influence over the arrangements of the vegetable and animal kingdoms. The ninth edition of the *Systema Naturæ* of Linnæus was published in 1746, eleven years before the appearance of Adanson's work, forming only an octavo volume of 236 pages, in which Linnæus does not appear to have used the term *mollusca*, the animals now thus designated being distributed by him, the naked species in the order *zoophyta*, in the class *vermes*, and the species bearing shells in the order *testacea*, of the same class. The tenth edition, which appeared in 1758, one year after the publication of the Voyage to Senegal, was much enlarged; and in the twelfth edition, which may be supposed to have received the last touches of its illustrious author, the part relating to the animal king-

dom had swelled to 1327 pages. This edition was published about ten years after Adanson's work, the perusal of which had probably somewhat modified the views of Linnæus. Linnæus divides his sixth class of animals into five orders, in the second of which are eight genera of true *mollusca*, viz., *ascidia, limax, aplysia, doris, tethys, sepia, clio*, and *scyllæa*. The third order is almost entirely devoted to *testacea*,* divided into, 1. *multivalves*, the shell having more than two pieces; 2. *bivalves*, having two pieces; 3. *univalves*, having one piece. The first division contains three genera, *chiton, lepas*, and *pholas*. The second contains fourteen genera; *mya, solen, tellina, cardium, mactra, donax, venus, spondylus, chama, arca, ostrea, anomia, mytilus*, and *pinna*. The third division, separated into two sections, according as the spire is regular or not, contains nineteen genera—*argonauta, nautilus, conus, cypræa, bulla, voluta, buccinum, strombus, murex, trochus, turbo, helix, nerita, haliotis, patella, dentalium, serpula, teredo*, and *sabella*. In giving the characters of his genera, with respect to the animals, Linnæus is always satisfied with citing the name of a naked *molluscum* described in the preceding order, which he supposes to be analogous to the animal of the genus under consideration; therefore it is probable that the influence exerted by Adanson's work over the latter editions of the *Systema Naturæ* extended only to increasing the number of genera, and causing them to be more rigorously marked out and described. Some of the approximations of the Linnæan system are unnatural and inconvenient, and some genera, nearly related, are too far separated in the arrangement; but its nomenclature, and the clearness and precision of its technical terms, gave it a predominance that it has maintained almost to the present day. A detailed explanation of the conchyliological system of Linnæus may be found in a dissertation by I. Murray, published in the eighth volume of the Academical Amenities.

The *Neues systematisches Conchylien Kabinet*—a great work commenced by Martini in 1769, continued by Chemnitz, and finished by Schroter in 1793—may be considered rather as a magnificent collection of figures of shells, well drawn and coloured, than as a system of conchyliology. As its figures are constantly referred to by the modern authors, it will be found very useful to students in identifying species and arranging their cabinets. The whole work consists of 12 volumes 4to. In 1776, Da Costa published his Elements of Conchology, in which more attention was paid by him to the characters of the aperture in univalves, and to the hinge in bivalves, than had been done by his predecessors; and the science is indebted to him for some valuable hints on the indelicacy of some of the terms employed by Linnæus to designate particular parts of bivalve shells. In 1766, Pallas had published his *Miscellanea Zoologica*, the principles of which, perhaps, entitle him to be considered as the founder of that new school which the French conchyliologists have since so successfully supported. He indicated the impropriety of separating the *testacea* from the naked *mollusca*, in the arrangement of Linnæus, and showed that a natural method could only arise from the consideration, not of the shells, but of the generic differences of the animals inhabiting them.

Notwithstanding the light struck out by Pallas, Bruguière, one of the modern authors to whom the science is most indebted, in 1792, still followed so closely the Linnæan arrangement as to admit the division of the molluscous worms and testaceous worms into two orders. His order *testacea* is nearly the same as that of Linnæus, except that the genera are somewhat more numerous and better defined. This order contains three divisions, according to the number of the valves. He divides the genus *lepas* of Linnæus into *balanus* and *anatifa*, dropping the term *lepas* altogether, in which he has been followed by Lamarck. This is so unusual, and, indeed, so ungracious a proceeding, that we would recommend to American conchyliologists always to use the term *lepas* instead of *anatifa*. Besides the two genera above-mentioned, he places among the multivalves, *chiton, teredo, fistulana, pholas, anomia*, and *crania*. Among the bivalves, his new genera are, *placuna, perna, trigonia, unio, tridacna, cardita*, and *terebratula*. Among his univalves are the following new genera: *fissurella, siliquaria, aspergillum, ovula, oliva, purpura, cassis, terebra, fusus, cerithium, bulimus, planorbis, natica, camerina, ammonites*, and *orthocera*.

In 1791 appeared the first volume of *Testacea utriusque Siciliæ, eorumque Historia et Anatome*—a splendid work, by Poli, an Italian physician, who first attempted to establish the genera of *mollusca* from the consideration of the animal only, without reference to the shell. This work may be considered as forming a remarkable epoch in the science, because, since its appearance, the classification of the *mollusca* and of the bivalves has become much more conformable to nature. The subjects figured in the superb plates of this work had been previously modelled in wax by the scholars of the author. In 1798, G. Cuvier proposed a new classification of molluscous animals. (*Tableau élementaire de l'Histoire naturelle des Animaux.*) In this, he acknowledged himself indebted to the critical observations of Pallas, and carried nearer to perfection the inventions of Poli. In this arrangement, also, may be found the improvements successively introduced by Bruguière into the distinction of genera, which Lamarck was then increasing every year, in his *course* at the *jardin du roi*.

Lamarck did not begin to publish the results of his labours, until 1798, when a memoir on the division of the genus *sepia* into three genera *sepia, loligo* and *octopus*, appeared in the *Journ. d'Hist. Nat.*, t. 1. Early in 1799, Lamarck published his *Prodromus* of a new classification of shells, laying down, more precisely, the generic characters, and establishing many new genera, and still continuing the old division into *univalves, bivalves*, and *multivalves*. Up to this time, Lamarck does not seem to have profited much by the labours of his predecessors towards the establishment of a natural conchyliological method, but acknowledges that he has adopted the principles and views of Bruguière. Late in 1799, Cuvier published a table of the divisions of the class of *mollusca*, at the end of the first volume of his Lessons of Comparative Anatomy. We see, in this, that Cuvier had derived light from the *Prodromus* of Lamarck. Indeed, these two great naturalists, by their successive works, seem to have afforded light alternately to each other for a number of years. In 1801, Lamarck published his *Animaux sans Vertèbres*, in which, not confining himself entirely to the shells, he has, like Cuvier, paid attention also to the animals. From this period until 1822, when he finished publishing the second edition of *Animaux sans Vertèbres*, under the title of *Histoire naturelle des Animaux sans Vertèbres*, many authors,* both continental and British, had pub-

* As Linnæus has said so little about the animals, if we translate *testacea* by the term *shells*, perhaps the error will be scarcely appreciable.

* De Ferussac, Draparnaud, Denys, de Montford, de Roissy, Bosc, Pérron, Leswrues, De Blainville, Dumeril, Chamisso, Kuhl, Von Moll, Von Fichtel, Megerle, Oken, Rafines-que, Desmarest, Savigny, Leach, Olfers, Sowerby, Schweiger, Swainson, Ranzani, Say.

lished memoirs and treatises on conchology, and many interesting facts had been collected, shedding much additional light on the science. Part of the 5th and the whole of the 6th and 7th volumes of the *Histoire naturelle des Animaux sans Vertebres*, are devoted to the conchyliophorous animals, the proper subjects of conchology. In this excellent work, Lamarck has improved upon the views of his friend Bruguiere in the following particulars:—not confining himself to the consideration of the shell; viewing the shell as forming part of an animal; introducing into conchology a great number of new generic groups; using a very rigorous and exact terminology; and treating as the foundation of the principal division among bivalves, the number of the muscular impressions. He has also abandoned the divisions, multivalves, bivalves, and univalves, which had been followed by most of the preceding conchologists, and has increased the number of genera to 261, to which we have added 20, marked by an *, and given brief generic characters of the whole. The specific descriptions of Lamarck, although short, are admirable for their precision, and the skill displayed in them in distinguishing clearly minute specific differences. The study of them will be found, by young naturalists, very beneficial and instructive.

In 1812, H. M. Ducrotay de Blainville read, before the philomathean society, a memoir, pointing out a necessary relation subsisting between the shell and the respiratory organs, and drawing therefrom a new principle of arrangement, depending on the existence or non-existence of a symmetry or regularity of form in those organs, and the protecting body, the shell.

In 1825, De Blainville published his *Manuel de Malacologie et de Conchyliologie*—a very valuable work, to which we are indebted for most of the historical facts recorded in this article. The first chapter of the second section of this work, consisting of eighty pages, treats of *shells*, or the *principles of conchology*, and recommends itself strongly to students by the fulness, accuracy, and clearness of its definitions, and the consistency of its general views.

In modern times, the study of the mollusca and their coverings has become very important from geological considerations. As particular genera are known to belong to particular strata of the earth's crust, and as the positions assumed by the living animals are known, the ascertained position of the fossils determines, with sufficient certainty, whether the stratum has undergone removal, disruption, or subversion since the death of the animals. The most interesting considerations are presented to the inquiring mind by some of the genera of microscopic shells; and the magnitude of the results produced by their infinite multiplicity causes their importance in the economy of nature to be felt with astonishment and admiration. Take, for instance, the *miliolites*, thus commented on by Lamarck: "The *miliolites* is a shell of most singular form, and perhaps one of the most interesting to study, on account of its multiplicity, in nature, and the influence which it has upon the condition and size of the masses at the surface of the earth, or which compose its external crust. It is one of those numerous examples which prove, that, in producing living bodies, what nature seems to lose in size, she fully regains in the number of individuals, which she multiplies to infinity, and with a readiness almost miraculous. The bodies of these minute animals exert more influence on the condition of the masses composing the earth's surface, than those of the largest animals, such as elephants, hippopotami, whales, &c., which, although constituting much larger individual masses, are infinitely less multiplied in nature. In the environs of Paris, some species of miliolites are so numerous, that they form almost the principal part of the stony masses of certain ranges." The naturalists of America have also contributed much valuable matter to the science in question, and some new genera and many new species have been added by their labours. Among the scientific gentlemen in America who have written on this subject, are Thomas Say, of Philadelphia, the late D. H. Barnes, of New York, doctor Hildreth, doctor Jacob Green, and Isaac Lea, of Philadelphia. In Britain, Drs Leach, Turton, and Fleming, Messrs Sowerby and Swainson, General Bingham and Captain Brown, have added many new genera and species of existing shells; and Sowerby's work on fossil shells will be a lasting memorial of his skill and research.

Synoptical Table of the Generic characters of Lamarck's Conchological System; arranged according to the descending scale; with some additional genera.

CLASS I.—MOLLUSCA Univalves.

ORDER I.—Heteropoda.

Having a head; two eyes; no arms; body free; swims horizontally; destitute of a foot; fins, but irregular.

Phylliroe and *Pterotrachea*, destitute of shells.

Carnaria, Cymbium, pl. 17, fig. 1. Conical, compressed, unilocular, convoluted; some are keeled; aperture oblong.

ORDER II.—Cephalopoda.

Division I.—Cephalopoda Sepiaria.

Family I.—Ammonacea.

Mantle bag-shaped; head protruding from the bag, with inarticulate arms, having suckers around the mouths; two eyes; mouth with horny mandibles.

The genera are *Sepia*, *Loligo*, *Loligopsis*, and *Octopus*, all destitute of shells.

Division II.—Cephalopoda Monothalama.

Argonauta Argo, pl. 17. fig. 2. Unilocular, involute; keel double and tuberculated.

Division III.—Cephalopoda Polythalama.

Family I.—Ammonacea.

Baculites, Turrilites, Ammonoceras, Orbulites, and *Ammonites*, are fossil.

Family II.—Nautilacea.

Nautilus pompilius, pl. 17, fig. 3. Multilocular, volutions concealed; septa perforating the disk.

Nummulites, Vorticulis, Polystomella, Siderolites, and *Discorbis*, are fossil.

Family III.—Radiolacea.

Placentula, Lenticulina, and *Rotalia*, fossil.

Family IV.—Spherulacea.

Melonia, fossil.

Miliola concentrica, cells transverse, surrounding the axis, aperture at base of last volution.

Family V.—Cristacea.

Orbiculina, Cristellarea, and *Renulina*, principally fossil.

Family VI.—Lituolacea.

Lituola and *Spirolina*, fossil.

Spirula Peronii, pl. 17, fig. 4. Multilocular, cylindrical, revolving on the apex; partitions equi-distant, with a communicating syphon; aperture round.

Family VII.—Orthocerata.

Conilites and *Hippurites*, fossil.

Nodosaria radicula, pl. 17, f. 5, straight, or slightly bent, nodose; septa perforated.

Orthocera raphanus, straight, or slightly bent; grooved longitudinally; cells divided by septa, perforated by a tube.

Belemnites, fossil.

ORDER III.—Trachelipoda.

Section I.—Zoophagous Trachelipoda.

Body of animal spirally convolute posteriorly, separated from the foot; shell spiral, enveloping the animal. This order is divided into three sections.

Family I.—Involuta.

Conus betulinus, pl. 17, f. 6. Turbinate, convolute, aperture longitudinal, effuse.

Oliva utriculus, pl. 17, f. 7. Subcylindrical, spire short, with channelled sutures; columella obliquely plaited.

Ancillaria glandiformis, pl. 17, f. 8. Subcylindrical, spire short; aperture hardly emarginate at the base; columella, with a varix at its base.

Terebellum subulatum, pl. 17, f. 9. Subcylindrical, apex sharp, aperture narrow, notched at base, columella smooth.

Cypræa lynx, oblong, margins involute; aperture dentate on each side, pl. 17, f. 10, spire nearly imperceptible.

Ovula verrucosa, pl. 17, f. 11. Turgid, margins convolute, the left one toothless; aperture longitudinal, extremities effuse.

FAMILY II.—COLUMELLARIA.

Volvaria cylindrica, pl. 17, f. 12. Cylindrical, aperture as long as the shell, columella with folds.

Marginella bivaricostata, pl. 17, f. 13. Oblong; spire short, right margin with a longitudinal varix; columella plaited.

Voluta scapha, pl. 17, f. 14. Oval, base emarginate; apex mammiform; no canal; columella plicated.

Mitra tæneata, pl. 17, f. 15. Turreted; apex pointed; no canal; columella plicated.

Columbella rustica, pl. 17, f. 16. Ovate, spire short; base emarginate, destitute of a canal, outer lip with a central protrusion.

FAMILY III.—PURPURIFERA.

Terebra vittata, pl. 17, f. 17. Elongated, turreted, acuminated; aperture very short; base of columella contorted.

Eburna spirata, pl. 17, f. 18. Lengthened, aperture longitudinal, base emarginate; columella with an umbilicus above, and a canal beneath.

Bucciuum lineolatum, pl. 17, f. 19. Ovate, aperture longitudinal, base emarginate, no canal.

Dolium tesselatum, pl. 17, f. 20. Ventricose, transversely ribbed; outer lip crenated; aperture longitudinal, base emarginate.

Harpa nobilis, pl. 17, f. 21. Ovate, turgid, with compressed longitudinal ribs; spire short, aperture longitudinal, emarginated; columella smooth, depressed.

Concholepas Peruvianus, pl. 17, f. 22. Ovate, ventricose, subspiral; apex inclined towards the outer lip; aperture expansive, with a notch at base of outer lip.

Monoceros glabratum, pl. 17, f. 23. Ovate, aperture longitudinal; outer lip with a conical tooth at its base.

Purpura bicostalis, pl. 17, f. 24. Aperture dilated, base emarginate, with a subsinus; columella depressed, acute beneath.

Recinula arachnoides, pl. 17, f. 25. Tubercular; aperture longitudinal; canal short, recurvate, with an oblique notch; columella with unequal teeth.

Cassis areola, pl. 17, f. 26. Bulging; apertnre longitudinal, compressed with a short, abruptly reflected canal; columella transversely plicated, outer lip frequently dentated.

Cassidaria echinophora, pl. 17. f. 27. Oblong; aperture longitudinal, compressed with an ascending canal; outer lip folded back, inner lip covering the columella.

FAMILY IV.—ALATA.

Strombus succinctus, pl. 17, f. 28. Ventricose, with a shortened canal; outer lip much dilated, crenated above, a sinus beneath, separated from the canal.

Pterocera millepeda, pl. 17, f. 29. Ovate; canal long, usually twisted; outer lip digitated, with a sinus near the base; spire short, resting on the lip.

Rostellaria columbina, pl. 17, f. 30. Fusiform, with a beak-shaped canal, and a siuus near its outer lip, dilated, sometimes dentated.

FAMILY V.—CANALIFERA.

Triton scorbiculator, pl. 17, f. 31. Oblong; a canal at the base; varices alternate or solitary; aperture oblong.

Murex acanthopterus, pl. 17, f. 32. Oblong, with a canal; varices spiuous and rough; aperture sub-ovate.

Ranella granulata, pl. 17, f. 33. Oblong, with a canal; varices distichous; aperture ovate.

Struthiolaria nodulosa, pl. 17, f. 34. Oval, spire long; aperture sinous and oval; canal short, straight; left margin callous, spreading.

Fyrula reticulata, pl. 17, f. 35. Somewhat pear-shaped; canaliculated; ventricose; no external ridges, spire short.

Fusus longicaudata, pl. 17, f. 36. Fusiform, having a canal; ventricose; spire lengthened.

Fasciolaria tulipa, pl. 17, f. 37. Sub-fusiform, canalicnlated; columella, with two or three oblique folds.

Cancellaria asperella, pl. 17, f. 38. Turreted, sub-caualiculated; columella plicated transversely, lip furrowed internally.

Turbinella scolymus, pl. 17, f. 39. Sub-fusiform, canaliculated; columella, with from 3 to 5 compressed transverse plaits.

Pleurotoma Babylonia, pl. 17, f. 40. Fusiform, with a longish straight canal; outer lip with a fissure near its junction with the body.

Cerithium aluco, pl. 17, f. 41. Turreted; body small, a short canal, and long spire; upper lip with a furrow at its top.

SECTION II.—PHYTOPHAGA.

FAMILY I.—TURBINACEA.

Turitella duplicata, pl. 17, f. 42. Turreted, aperture round, margin detached above: lip with a sinus.

Phasianella varia, pl. 17, f. 43. Conical, aperture entire, oval, with margin disunited; lip acute, not reflected.

Planaxis undulata, pl. 17, f. 44. Conically-ovate; aperture ovate; columella depressed and truncated, separated from the lip by a sinus; lip interiorly sulcated.

Turbo smaragdus, pl. 17, f. 45. Sub-turriculated; aperture round, disunited above; columella arched and depressed.

Monodonta canalifera, pl. 17, f. 46. Conoid; aperture round, disunited above; columella arched, base truncated.

Trochus papillosus, pl. 17, f. 47. Conical, spire usually produced; aperture transversely depressed, margin disunited; pillar arched, base somewhat oblique.

Rotella vestrarius, pl. 17, f. 48. Orblcular, destitute of epidermis; spire subconoid, very short; aperture roundish.

Solarium variegatum, pl. 17, f. 49. Orbicular, spire much depressed; largely umbilicated; internal margins of whorls notched; aperture wide, quadrangular.

FAMILY II.—SCALARIDES.

Delphinula laciniata, pl. 17, f. 50. Subconic, largely umbilicated; solid, whorls angular, rough; aperture round, spire depressed.

Scalaria coronata, pl. 17, f. 51. Subturreted, with elevated interrupted ribs; aperture nearly round.

Vermetus lumbricalis, pl. 17, f. 52. Tubular, irregularly spiral; adhering to other substances by its apex; aperture round, margin united.

FAMILY III.—PLICACEA.

Pyramidella maculosa pl. 17, f. 53. Turreted; no epidermis; aperture semi-oval, exterior margin acute; columella straight, with 3 transverse plats.

Tornatella flammea, pl. 17, f. 54. Cylindrically-oval; no epidermis; aperture oblong, margin acute, with folds on the columella.

FAMILY IV.—MACROSTOMA.

Haliotis tuberculata, pl. 17, f. 55. Auriform, depressed; spire small, short, nearly lateral; aperture expansive, large; disk perforated with a row of holes.

Stomatia phymotis, pl. 17, f. 56. Auriform, spire prominent; aperture expanded, imperforate; back with a transverse tubercular rib.

Stomatella auricula, pl. 17, f. 57. Auriform, imperforate; aperture wide.

Sigaretus Haliotoideus, pl. 17, f. 58. Somewhat auriform, nearly orbicular; aperture much expanded; margins disunited. *Galericulum lævigatum*, pl. 17, f. 111. Semiovate.

FAMILY V.—IANTHINIA.

Ianthina exigua, pl. 17, f. 59. Conoid, gibbous; aperture triangular; columella straight.

FAMILY VI.—NERITACEA.

Natica stercus-muscarum, pl. 17, f. 60. Subglobular, umbilicated, modified by a callosity; aperture semilunar; outer lip acute.

Nerita peloronta, pl. 17, f. 61. Semiglobular, depressed beneath; no umbilicus; aperture semicircular; pillar lip often dentated; outer lip with internal dentations.

**Neritoides litteralis*, pl. 17, f. 112. Subrotund; spire depressed, aperture nearly round; lip continuous, having a slight groove at its junction with the body.

Neritina punctulata, pl. 17, f. 62. Semiglobular, depressed beneath; aperture semicircular; outer lip flattened.

Navicella tesselaria, pl. 17, f. 63. Elliptical, convex above, concave beneath; spire oblique.

FAMILY VII.—PERISTOMINA.

Ampullaria rugosa, pl. 17, f. 64. Globular, base umbilicated: aperture oblong, margin united; outer lip nut reflected, sharp.

Paludina vivipara, pl. 17, f. 65. Conoid, convex; aperture roundish, angular above; margins continuous, acute, never reflected.

Valvata depressa, pl. 17, f. 66. Discoid, volutions cylindrical; aperture somewhat round, margins acute and continuous.

Pirena Madagascarensis, pl. 17, f. 67. Turreted; aperture oblong: outer lip acute, with a sinus at top and base; base of columella bent to the right.

Melanopsis costata, pl. 17, f. 68. Turreted, aperture oblong-oval; columella callous above, base truncated; separated from the inner margin by a sinus.

Melania granifera, pl. 17, f. 69. Turreted; aperture ovate, widening at the base; pillar smooth, arched interually.

FAMILY IX. LYMNÆACEA.

Lymnæa auricularia, pl. 17, f. 70. Oblong, sometimes with the spire long and acute; aperture oblong; outer lip acute; inner lip reflected on the columella, forming an oblique plait.

Physa hypnorum, pl. 17, f. 71. Oblong, spire acute, and sinistral; aperture oblong, contracted above; columella twisted; outer lip acute.

Planorbis corneus, pl. 17, f. 72. Discoid, spire completely depressed; volutions apparent on both sides; aperture obliquely lunate, margin not reflected.

FAMILY X.—COLIMACEA.

Cyclostoma bistriatus, pl. 17, f. 73. Variously formed; volutions prominent; aperture orbicular, margins continuous.

Auricula felis, pl. 17, f. 74. Oblong-ovate; aperture longitudinal, straitened above; columella platted; lip sometimes reflected outwardly.

Succinea amphibia, pl. 17, f. 75. Oblong-ovate; aperture elongated, and large; spire short.

Achatina perdix, pl. 17, f. 76. Oblong; aperture elongated; outer lip acute, but never reflected; columella truncated at the base.

Bulimus radiatus, pl. 17, f. 77. Turreted, or oblong-ovate; aperture longitudinal, margins disunited above; columella smooth.

Clausilia ventricosa, pl. 17, f. 78. Fusiform; apex slightly obtuse; aperture irregular; lips generally toothed, continuous and free.

Pupa unidentata, pl. 17, f. 79. Cylindrical; aperture irregular in form; margins nearly equal, disjointed above by a columellar plate.

Helicina major, pl. 17, f. 80. Subglobular; aperture somewhat oval; columella transverse; margins acute, with an angle on the right one.

Anastoma globosa, pl. 17, f. 81. Orbicular; spire obtusely convex; aperture subrotund and turned upwards, internally dentated; outer lip reflected.

Carocolla Madagascarensis, pl. 17, f. 82. Orbicular, convex above, circumference of the body angularly edged; aperture broader than long, and contiguous to the axis angular on the

margin near the columella; sometimes with dentations beneath.

Helix nemoralis, pl. 17, f. 83. Orbicular; spire somewhat elevated; aperture broader than long; margin not continuous.

ORDER IV.—Gasteropoda.

Body always straight, never enveloped in a shell which can entirely contain it; foot situated under the abdomen, united to the body nearly its whole length.

Family I.—Limacinea.

Vitrina elongata, pl. 17, f. 84. Depressed, spire very short; body very large, aperture expanding; outer lip bent inwards.

Testacella Haliotoidea, pl. 17, f. 85. Nearly auriform, summit slightly spiral, aperture large, much expanded; outer lip slightly inflected.

Limax rufus, pl. 17, f. 86. Shell internal: slightly spiral; aperture much expanded.

Parmacella Olivieri, pl. 17, f. 87. Shell situated interiorly and posteriorly; somewhat spiral; aperture much dilated, margin subacute. *P. Calyculata*, pl. 17, f. 108.

Onchidium. Destitute of a shell.

SECTION II.—Hydrobranchiæ.

Family II.—Laplysiacea.

Dolabella callosa, pl. 17, f. 88. Oblong, slightly arched, callous and spiral on each side.

Laplysia radiata, pl. 17, f. 89. Nearly round; outer lip somewhat reflected, outer lip acute.

Family III.—Bullacea.

Bulla amygdala, pl. 17, f. 90. Somewhat cylindrical; aperture its whole length; destitute of spire and pillar.

Bullæa catena, pl. 17, f. 91. One side somewhat involute, destitute of columella or spire; aperture expansive.

* *Utriculus obtusa*, pl. 17, f. 110. Oblong-ovate; outer lip nearly the length of the body; spire very short; volutious prominent.

**Akera flexilis*, pl. 17, f. 109. Elastic; apex obtuse, canaliculated; volutions even with the body; aperture whole length of shell, contracted at top, dilated at base; columella visible to the end.

Acera. Destitute of a shell.

Family IV.—Calyptracea.

Ancylus fluviatilis, pl. 17, f. 92. Obliquely conical; apex acute, reflected backwards, margin simple continuous.

Crepidula fornicata, pl. 17, f. 93. Oblong, back convex, concave beneath, spire depressed and inclined; aperture partly closed with a horizontal plate.

Calyptræa sinense, pl. 17, f. 94. Conical, apex vertical, somewhat acute; base orbicular, provided internally with a subspiral plate.

Pileopsis Ungarica, pl. 17, f. 95. Obliquely conical; apex subspiral; aperture somewhat rounded; anterior margin shortest.

Fissurella Græca, pl. 17, f. 96. Subconic, slightly concave on the sides; apex perforated; aperture ovate, entire.

**Sipho striata*, pl. 17, f. 113. Subconic, vertex turned to one side, slightly spiral, a small fissure near the apex; inside with a rhombic funnel-shaped syphon.

Emarginula fissura, pl. 17, f. 97. Conical, vertex inclined; internal cavity simple; posterior margin with a notch.

Parmophorus Australis, pl. 17, f. 98. Oblong, slightly convex above; apex inclined backwards.

Family V.—Semiphyllidiacea.

Umbrella Indica, pl. 17, f. 99. Orbicular, slightly convex; vertex nearly central.

Pleurobranchus plumula, pl. 17, f. 100. Obliquely oval, thin and flat.

Family VI.—Phyllidiacea.

Patella vulgata, pl. 17, f. 101. Subconic, simple, concave; vertex anteriorly inclined.

Chiton marginatus, pl. 17, f. 102. A coriaceous border, with a series of transverse imbricated plates.

Chitonellus striatus, pl. 17, f. 103. Elongated, middle of back provided with a multivalve shell; sides naked.

Phyllidia. Destitute of a shell.

Family VII.—Tritoniacea.

Doris, *Tethys*, *Scyllæa*, *Titonia*, *Eolis*, and *Glaucus*. Destitute of shells.

ORDER V.—Pteropoda.

Destitute of foot and arms; two opposite fins; body free.

Pneumodermon. Shelless.

Cymbulia proboscidea, pl. 17, f. 104. Oblong, flexible, and very transparent.

Limacina helicialis, pl. 17, f. 105. Subspiral, discoidal, very thin.

Cleodora pyramidata, pl. 17, f. 106. Flexible, transparent form of a reversed pyramid.

Clio. Destitute of a shell.

Hyalæa cuspidata, pl. 17, f. 107. Transparent, globular; three teeth behind; summit and two posterior sides open.

CLASS II.—CONCHIFERA. Bivalves.

Animals soft, inarticulated, without head or eyes, and adhering to a bivalve shell; having external branchiæ, simple circulation, and a unilocular heart.

ORDER I.—Monomyaria.

With one muscular attachment, and one subventral muscular impression.

SECTION I.—No Ligament

Family I.—Brachiopoda.

Lingula anatina, pl. 18, fig. 1. Oblong, subequivalve, depressed, summit truncated; base acute, with a peduncle; no teeth.

Terebratula vitrea, pl. 18, f. 3. Inequivalve, adhering by a peduncle; larger valve perforated at summit, having a projecting hook: hinge with two teeth; disk of small valve with two osseous processes.

Orbicula Norwegica, pl. 18, f. 2. Inequevalve, roundish; no hinge; lower valve flat, upper valve subconic.

Family II.—Rudista.

Crania striata, pl. 18, f. 4. Roundish, inequivalve; lower valve flat, with oblique holes; upper valve convex, with two internal callosities.

Discina ostreoides, pl. 18, f. 5. 5. Inequivalve, flattish, with central disk; lower valve with a fissure.

Gen. Birostritus, Calcola, Radiolites, and Sphærulites, fossil.

SECTION II.—Ligament Marginal.

Family I.—Ostracea.

Anomia Ephippium, pl. 18, f. 6. Inequivalve, lower valve flat, perforated, adhering by a testaceous plug; upper valve convex.

Placuna sella, pl. 18, f. 7. Depressed, irregular, nearly equivalve; hinge with two divergent ribs, impressed into the opposite valve.

Vulsella spongiarum, pl. 18, f 8. Longitudinal and subequivalve: beaks equal; hinge with an oblique hollow for the ligament.

Ostrea cornucopiæ, pl. 18, f. 9. Inequivalve, irregular, beaks separated; no teeth in the hinge; ligament half internal.

Gryphæa secunda, pl. 18, f. 10. Inequivalve; lower valve convex, with a produced spiral beak; upper valve small; hinge without teeth; muscular impression single.

Family II.—Pectinides.

Podopsis truncata, pl. 18, f. 11. Inequivalve adhering by the beak; lower valve largest, no ears nor teeth.

Spondylus spatuliformis, pl. 18, f. 12. Inequivalve, beaks unequal; eared, rugose; hinge with two strong recurved teeth in each valve; ligament in an intervening hollow; ligament external.

Plicatula cristata, pl. 18, f. 13. Inequivalve, adherent; no ears; base narrowed; superior margin platted; beaks unequal; two teeth in each valve, with an intermediate hollow for the ligament, which is external.

Pecten radula, pl. 18, f. 14. Free, equivalve, eared; no teeth; ligament internal.

Phlagiostoma semilunaris, pl. 18, f. 15. Slightly eared; base transverse, parallel; no teeth; ligament partly internal, receptacle conical.

Lima fragilis, pl. 18, f. 16. Subequivalve; longitudinal; eared; no teeth; beaks divergent; ligament external.

Pedum spondyloideum, pl. 18, f. 17. Inequivalve, ears minute, lower valve convex; no teeth; ligament partly exterior, placed in the internal wall of the beaks, which are unequal; lower valve notched.

SECTION III.—Ligament elongated and marginal.

Family I.—Malleacea.

Meleagrina margaritifera, p. 18, f. 18. Subequivalve; scaly externally; posterior base with a sinus for the byssus; no teeth; ligament nearly external.

Avicula obliqua, pl. 18, f. 19. Inequivalve; base parallel, extremities projecting; left valve notched; hinge with one tooth in each valve, under the beaks; ligament external.

Malleus vulgaris, pl. 18, f. 20. Subequivalve; distorted; base frequently sublobed; beaks divergent; no teeth, a furrow under the beaks.

Perna isognomum, pl. 18, f. 21. Subequivalve; depressed; slightly distorted; teeth of hinge sulciform and parallel; a sinus for the byssus.

Crenatula phasianoptera, pl. 18. f. 22. Subequivalve; depressed; foliaceous; hinge lateral, crenated and hollow to receive the ligament.

Family II.—Mytilacea.

Pinna elegans, pl. 18, f. 23. Equivalve; wedge-shaped; beaks straight; no teeth.

Mytilus Afer, pl. 18, f. 24. Longitudinal; equivalve; beaks pointed; affixed by a byssus; seldom any teeth; ligament partly interior; muscular impression elongated.

Modiola papuana, pl. 18, f. 25. Subtransverse, equivalve, posterior side very short; no teeth.

Family III.—Tridacnites.

Hippopus maculatus, pl. 18, f. 26. Equivalve, inequilateral, transverse; two compressed teeth.

Tridacna squamosa, pl. 18, f. 27. Equivalve, inequilateral, transverse: at the hinge a subrotund opening.

ORDER II.—Dimyaria.

Muscular impressions two, separate and lateral.

Section I.—Irregular and always inequivalve.

Family I.—Camacea.

Etheria elliptica, pl. 18, f. 28. Adherent; beaks short, involved; no teeth; ligament tortuous and interior.

Chama arcinella, pl. 18, f. 29. Adherent; beaks bent, unequal; one valve with a thick tooth penetrating the opposite valve.

Diceras arietina, pl. 18, f. 30. Adherent, inequivalve; beaks very large, conical, divergent, irregularly spiral; greater valve with a large thick tooth.

Section II.—Lamellipides.

Family I.—Nayades.

Inhabit fresh water.

Iridina exotica, pl. 18, f. 31. Equivalve, inequilateral, transverse; beaks small, nearly straight; hinge elongated; tuberculous; ligament exterior and marginal.

Anadonta cygnea, pl. 18, f. 32. Inequilateral, equivalve, transverse; hinge linear; no teeth.

Hyria corrugata, pl. 18, f. 33. Equivalve, trigonal, auriculated; two spreading teeth, posterior one divided into divergent portions, anterior one strong, lamellar.

Unio irroratus, pl. 18, f. 34. Equivalve, transverse; two teeth in each valve, one short, divided; the other elongated, compressed.

Family II.—Trigonacea.

Castalia ambigua, pl. 18, f. 35. Equivalve, inequilateral, beaks posteriorly recurved: two lamellar teeth; posterior remote, shortened; the other anterior, elongated, lateral.

Trigonia scabra, pl. 18, f. 36. Equivalve, inequilateral, trigonal, or orbicular: primary teeth oblong, divergent, and flatteued on the sides; two in the right valve and a groove on one side; ligament exterior, marginal.

Family III.—Arcacea.

Nucula tenuis, pl. 18, f. 37. Equivalve, inequilateral, trigonal, or oblong; hinge with numerous teeth; a ceutral oblique hollow; beaks bent backwards; ligament marginal.

Pectunculus pilosus, pl. 18, f. 38. Orbicular, equivalve, subequilateral; teeth numerous, oblique; ligament external.

Arca tortuosa, pl. 18, f. 39. Transverse, subequivalve, inequilateral; teeth numerous, parallel; ligament external,

Cucullæa auriculifera, pl. 18, f. 40. Inequilateral, equivalve, gibbous; teeth numerous, small, parallel; ligament exterual.

Family IV.—Cardiacea.

Isocardia Moltkiana, pl. 18, f. 41. Equivalve, ventricose, heart-shaped; beaks much apart, divergent, spirally twisted; primary teeth 2, flattened; lateral tooth placed under the ligament, which is exterior.

Hiatella arctica, pl. 18, f. 42. Equivalve, inequilateral transverse; upper margin gaping; teeth two, small and indistinct, fitting into cavities in the opposite valve.

Cypricardia coralliophaga, pl. 18, f. 43. Equivalve, inequilateral, obliquely elongated; 3 primary teeth; a lateral tooth under the beaks.

Cardita crassicosta, pl. 18, f. 44. Equivalve, inequilateral; 2 unequal teeth; one short and straight, the other oblique.

Cardium elongatum, pl. 18, f. 45. Equivalve, subcordiform; beaks produced; internal margins dentated; 4 teeth in each valve, two primary ones, approximate and oblique, lateral ones distant.

Family V.—Conchacea.

Venericardia imbricata, pl. 18, f. 46. Equivalve, equilateral; suborbicular; generally longitudinally ribbed; 2 oblique primary teeth.

**Ortygia sulcata*, pl. 18, f. 47. Equivalve, transverse; three teeth in each valve, two approximate; ligament subexternal.

Venus verrucosa, pl. 18, f. 48. Equivalve, inequilateral; 3 primary teeth in each valve; lateral ones divergeut; ligament external.

Cytherea erycina, pl. 18, f. 49. Equivalve, inequilateral; geuerally suborbicular; 4 primary teeth in the right valve, 3 of which are divergent; other valve with three diverging primary teeth.

**Exoleta lincta*, pl. 18, f. 50. Equivalve, orbicular, inequilateral; beaks much turned to one side; three primary teeth, two contiguous, one divergeut; cartilage subinternal.

Cyprina Islandica, pl. 18, f. 51. Equivalve, inequilateral; obliquely cordiform; beaks oblique; three primary teeth, unequal, approximate at their base, divergent above; a remote lateral tooth.

**Lasæa rubra*, pl. 18, f. 52. Equivalve, inequilateral; umbo prominent; hinge with two nearly obsolete primary teeth; lateral distinct teeth.

Galathea radiata, pl. 18, f. 53. Equivalve, subtrigonal; two primary furrowed teeth in the right valve, three in the left; lateral teeth remote, ligament external.

Cyrena fuscata, pl. 18, f. 54. Trigonal, ventricose, thick; three teeth in each valve; two lateral teeth contiguous to the primaries; ligament external.

Cyclas cornea, pl. 18, f. 55. Equivalve, oval, gibbous, transverse; primary teeth, two in each valve, extremely small, one divergent; lateral tooth elongated, lamelliform; ligament external.

**Pisidium ob'iqua*, pl. 18, f. 56. Equivalve, transverse; right valve with one, and the left valve with two small primary teeth; behind and before two thin lamellar teeth, cleft in the right valve.

Section III.—Tenuipedes.

Family I.—Nymphacea.

Crassina sulcata, pl. 18, f. 57. Equivalve, suborbicular, transverse; right valve with two strong teeth; left valve two unequal ones; ligament external.

Capsa Braziliensis, pl. 18, f. 58. Equivalve, transverse; right valve two teeth, a bifid tooth in the left; ligament external.

Donax denticulata, pl. 18, f. 59. Equivalve, transverse, inequilateral; one or two primary teeth in each valve, and one or two lateral ones; ligament exterior, short.

Lucina carnaria, pl. 18, f. 60. Inequilateral, suborbicular; two primary divergent teeth, one of them bifid; two lateral teeth; ligameut exterual.

**Mysia rotundata*, pl. 18, f. 61. Suborbicular, inequilateral hinge with two primary teeth, united at their base and divergent; behind these an oblique descending cavity; ligament external.

Corbis lamellosa, pl. 18, f. 62. Equivalve, transverse; beaks bent inwards; two primary teeth and two lateral ones; muscular impression simple.

**Arcopagia crassa*, pl. 18, f. 63. Equivalve, transverse; valves subdepressed, two primary teeth in each, the larger ones cleft; left valve with two lateral teeth, fitting into clefts in the opposite valve; muscular impressions very large.

Tellinides roseus, pl. 18, f. 64. Inequilateral, transverse; depressed; two teeth in each valve divergent; two nearly obsolete teeth in one valve.

Tellina punicea, pl. 18, f. 65. Orbicular or transverse; usually depressed; anterior side angular; margin flexuous; one or two primary teeth in the same valve; two lateral teeth.

Psammotæa variegata, pl. 18, f. 66. Transverse, ovate-oblong; gaping slightly at the sides; one primary tooth in each valve, or in one only; ligament external.

Psammobia vespertina, pl. 18, f. 67. Transverse, elliptical, depressed; gaping slightly on each side; two teeth in the left, and one in the right valve; ligameut external.

Sanguinolaria Occidens, pl. 18, f. 68. Transverse ovate; upper margin produced; 2 approximate teeth in each valve.

Family II.—Lithophagi.

Venerupis irus, pl. 18, f. 69. Transverse inequilateral; posterior side short; anterior gaping slightly; two teeth in the right and three in the left valve; sometimes three in each; ligament external.

Petricola Pholadiformis, pl. 18, f. 70. Inequilateral, subtrigonal, transverse; posterior side rounded; anterior side attenuated; gaping slightly; two teeth in each valve; sometimes but in one.

Saxicava Præcisa, pl. 18, f. 71. Transverse, inequilateral; gapiug anteriorly; teeth nearly imperceptible; ligament external.

Family III.—Corbulacea.

Pandora rostrata, pl. 18, f. 72. Inequivalve, inequilateral, trausverse; upper value depressed, under one convex; two primary teeth in the upper valve, fitting into two grooves in the under one; ligament iuternal.

Corbula sulcata, pl. 18, f. 73. Inequivalve, inequilateral; one primary ascending tooth in each valve, with a hollow pit at its side; no lateral teeth; ligament internal.

Family IV.—Mactracea.

Amphidesma Lucinalis, pl. 18, f. 74. Inequilateral, transverse; subovate; sometimes gapiug at the sides; one or two teeth; ligameut double.

Solemya Mediterranea, pl. 18, f. 75. Inequilateral, transverse, ends obtuse; one compressed primary oblique tooth in each valve; ligameut subexternal.

**Tellimya suborbicularis*, pl. 18, f. 76. Inequilateral, suborbicular, or transverse; right valve with two recurved primary teeth; left none.

Ungulina transversa, pl. 18, f. 77. Nearly equilateral, longitudinal or transverse; in each valve a short, slightly cleft, primary tooth, and a divided groove; ligament internal.

Erycina striata, pl. 18, f. 78. Subinequilateral, transverse, sometimes gapiug; two diverging primary teeth, with an interposed hollow; two oblong lateral teeth; ligament internal.

Crassatella Kingicola, pl. 18, f. 79. Inequilateral; rouudish, sometimes trausverse; two primary teeth, sub-divergent, a hollow pit on their side; no lateral teeth; ligameut internal.

**Ligula tenuis*, pl. 18, f. 80. Subequilateral; one broad transverse tooth, with a central cavity for the reception of the ligament.

**Mactrina triangularis*, pl. 18, f. 81. Subtriangular, inequilateral, left valve with a strong triangular slightly bifid tooth; and on each side are pits for the reception of two depressed lateral teeth in the opposite valve, which have a pit interveulug; ligament exterual.

Matra Stultorum, pl. 19, fig. 1. Subinequilateral, subtransverse, subtrigonal; sides slightly gaping; each valve with one primary compressed tooth, and two lateral teeth; a heart-shaped cavity contiguous to the umbo; ligament internal.

Lutraria compressa, pl. 19, f. 2. Inequilateral, transverse-oblong, extremities gaping; a triangular tooth, and an oblique deltoid transverse hollow; ligament internal.

Section IV.—Crassipedes.

Posterior margin gaping.

Family I.—Myaria.

Anatina convexa, pl. 19, f. 3. Subequivalve, transverse, gapiug at one or both sides; one horizontal spoon-shaped projecting tooth in both valves, a lateral plate beneath; ligament interual.

Mya arenaria, pl. 19, f. 4. Inequivalve, transverse, gaping at both ends; left valve with a vertical, projecting thick tooth; none in the other; ligameut internal.

**Galeomma Turtoni*, pl. 19, f. 5. Equlvalve, inequilateral transverse, front margin with a gape; no teeth; ligament in ternal.

**Magdala striata*, pl. 19, f. 6. Inequivalve, transversely ovate; gaping at one end; no teeth; hinge provided with an

unconnected plate, attached to each valve by an internal cartilage, in an oblique descending groove.

**Myatella striata*, pl. 19, f. 7. Sub-parallelogrammical, transverse, anterior, and truncated; one erect, broad, doubly-channelled tooth in the left valve; none in the other.

**Crenella elliptica*, pl. 19, f. 8. Oblong-ovate, equilateral, ventricose; beaks obtuse; no teeth; but a flattened crenated plate in each valve.

**Spenia Binghami*, pl. 19, f. 9. Inequilvalve, transverse, oblong-ovate; slightly tortuous; toothless; cardinal margin flatteued.

FAMILY II.—SOLENIDES.

Glycimeris Siliqua, pl. 19, f. 10. Equlvalve, transverse, gaping widely at each side; hinge callous, without teeth; ligament external.

Panopea Aldrovandi, pl. 19, f. 11. Equivalve, transverse, sides gaping; each valve with one primary conical tooth, and a callosity on one side; ligament external.

Solen Vagina, pl. 19, f. 12. Equivalve, much elongated, transversely; gaping widely at both sides; primary teeth, small, beut, and varying in number; ligament external.

FAMILY III.—PHOLADARIA.

Gastrochæna modiolina, pl. 19, f. 13. Equivalve, nearly wedge-shaped; anterior opening large; hinge marginal; linear, no teeth.

Pholas dactylus, pl. 19, f. 14. Equivalve, transverse; both sides gaping; hinge with accessory plates; inferior margins inflated.

FAMILY IV.—TUBICOLA.

Teredo navalis, pl. 19, f. 15. Tubular tortuous; open at both extremities; a bivalve shell placed posteriorly outside the tube; f. 16 side valve; 17 one of the bivalves; 18 section of luterior part of the tube.

Terędina personata, pl. 19, f. 19. Tubular, cylindrical, posterior extremity closed, but exhibiting the two valves of the shell; anterior end open.

Septaria arenaria, pl. 19, f. 20. Tubular, lengthened; tapering anteriorly, divided by imperfect partitions; anterior end with two slender tubes.

Fistulana clava, pi. 19, f. 21. Tubular, tumid, closed posteriorly; anteriorly attenuated; summit open with a bivalve, which gapes. Fig. 22 a side valve.

Clavagella aperta, pl. 19, f. 23. Tubular, attenuated, open anteriorly; posteriorly club-shaped; a valve attached to one side of its walls, the other within the sheath, unattached. Fig. 24 a face valve.

Aspergillum Javanum, pl. 19, f. 25. Tubular, attenuating towards the anterior eud; posterior end with a club-shaped, spiral termination.

CLASS III.—CIRRIPEDA.

Animals soft, destitute of head or eyes, covered with an adhering shell.

ORDER I.—PEDUNCULATA.

Body supported on a tubular peduncle.

Otion Cuvieri, pl. 19, f. 26. Two small semilunar valves, attached near the lateral opening.

Cineras vittata, pl. 19, f. 27. Compressed, five oblong, separate valves; two on the sides, the others dorsal.

Pollicipes mitella, pl. 19, f. 28. Compressed, with many contiguous valves, lower ones smallest.

**Scalpellum vulgare*, pl. 19, f. 29. Compressed, valves numerous, mostly with a central knob on each, and concentrically striated.

Anatifa vitrea, pl. 19, f. 30. Compressed, five-valved, the lower lateral ones largest, adhering by a membrane.

ORDER II.—SESSILIA.

Body inclosed in a multivalve shell which is seated on rocks or marine bodies; mouth aud tentacula in the opening of the shell; operculated.

Pyrgoma crenata, pl. 19, f. 31. Seated, univalve, ventricose; opening at the apex, small, elliptical, lid bivalve.

Creusia verruca, pl. 19, f. 32. Seated, orhicular, convexo-conical; valves four, closely united; operculum bivalve.

Acasta Montagui, pl. 19, f. 33. Seated, ovate, subconic, compressed; six-valved; operculum four-valved.

**Adna Anglica*, pl. 19, f. 34. Seated, cup-shaped. shell of one part, aperture lozenge, operculum four-valved; f. 35 the lid.

Balanus Cranchii, pl. 19. f. 36. Seated, four-valved with a testaceous plate closing the base; aperture subtigonal; lid four-valved.

Coronula testudinaria, pl. 19, f. 37. Suborbicular, valves indivisible, conoid at the extremities; internally hollowed in radiating cells; aperture roundish, funnel-shaped; operculum of four obtuse valves.

Tubicinilla balænarum, pl. 19, f. 38. Tubular, straight, slightly narrowed towards the base; transversely ribbed; lid four-valved.

DIVISION III.—ARTICULATA.

CLASS V.—ANNELIDES.

Elongated, soft, consisting of segments; having red blood.

ORDER I.—SEDENTARIÆ.

Animals placed in a testaceous tube, in which they ever live; branchiæ at one extremity of the body.

FAMILY I.—SERPULACEA.

Magilus antiquus, pl. 19 f. 39. Base spirally bent, oval, four contiguous volutions prolonged into an erect tube, which is convex above, and carinated beneath, somewhat depressed, and plicated on the sides.

Galeolaria recumbens, pl. 19, f. 40. Tubes numerous, cylindrical, fixed by their base, open at their summits; aperture circular, with a spatulous tongue at its terminatiou; operculum orbicular, with five to nine plates.

Vermilia triquetra, pl. 19, f. 41. Tubular, cylindrical, posteriorly, narrowed, somewhat twisted, adhering to marine bodies by the sides; aperture circular; margin frequeutly with from one to three teeth.

Serpula tubularia, pl. 19, f. 42. Tubular, irregularly contorted, grouped or solitary, adhering; aperture circular and terminal.

Spirorbis spirillum, pl. 19, f. 43. Tube spirally twisted into an orbicular shape, depressed, and adhering beneath.

FAMILY II.—AMPHITRITÆA.

Amphitrite ventilabrum, pl. 19, f. 44. Tube cylindrical, tapering towards the base, membranous or coreaceous.

Terebella conchilega, pl. 19, f. 45. Tube cylindrical, elongated, attenuated, and pointed at the base, membraneous, consisting of agglutinated grains of sand, or testaceous fragments.

Sabellaria crassissima, pl. 19, f. 46. With numerous tubes, united in a common mass, of shelly or sandy fragments; orifices cup-shaped.

Pectinaria Belgica, pl. 19, f. 47. Tube in the form of a reversed cone; consisting of agglutinated grains of sand.

FAMILY III.—MALDANIÆ.

Dentalium entalis, pl. 19, f. 48. Tubular, tapering, regular, slightly creuated; open at both extremities.

Brochus reticulatus, pl. 19, f. 49. Cylindrical, tapering slightly, sub-crenated; imperforate at the smaller end; aperture placed at the larger end; orbicular.

Cornuoides minor, pl. 19, f. 50. Cylindrical, tapering, the smaller end spiral and closed, broad end with a circular aperture.

Clymene. Tube slender, open at both extremities, and incrusted externally with grains of sand and fragments of shells.

FAMILY IV.—DORSALIÆ.

Siliquaria anguina, pl. 19, f. 51. Tubular, irregularly twisted, posteriorly tapering, sometimes spirally; open at the anterior extremity, with a longitudinal cleft, extending along its whole length.

Arnicola. Destitute of shell.

EXPLANATION OF THE PARTS OF SHELLS.

OF THE OPERCULA OF UNIVALVE SHELLS.

The opening, or aperture of many univalve shells, is covered, when the animal is withdrawn within, by an operculum or lid, intended for the protection of the inhabitant. This is attached to the foot of the animal, and is either of a horny substance, or is testaceous, being as hard as the shell itself. This appendage will be familiar to all who have seen the common periwinkle which is abundant on most rocky shores. Its texture is of a horny nature.

Operculum of Nerita Undulata, pl. 19, fig 52. Phasianella Bullinoides, 53. Trochus Pharaonis, 54. Melania Byronensis, 55. Neritia fluviatilis, 56. Panludina achatina, 57. Turbo Pica, 58. Neritoides littoralis, 59. Murex Brandaris, 60. Buccinum undatum, 61. Strombus Auris-Dianæ, 62. Trochus littoralis, 63.

Animal of the *Monodonta Pica* f. 64, *a*, the tentacula or feelers; *b*, the trunk; *cc*, the pedicles, with the eyes at their tips; *dd*, the branchiæ or gills; *ee*, mantle; *f*, foot; *g*, the operculum; *h*, the tail, or that extremity of the animal which occupies the volutions at the tip of the shell.

The following are the shells figured, explanatory of the different parts:—Fig. 65, Fusus antiquus; 66, Voluta vespertilio; 67, A lusus naturæ of Helix Pomatia; 68, Spirula Peronii; 69, Cassis ariola; 70, Cypræa exanthema; 71, Clausilia ventricosa; 72, Planorbis Planata; 73, Crepidula aculeata; 74, Fusus discrepans; 75, Dolium galea; 76, Turitella terebra; 76,* Helix Umbilicata; 77, Cytherea Chioue; 78 Hinge of Lutraria elliptica; 79, Solen truncatus; 80, Cardium elongatum; 81, Spondylus gæderopus; 82, Anomia squamula; 83, Cardium edule; 84, Venus Cassina; 85, Pecten obsoletus; 86, Pholas candidus; 87, Anatifa striata; 88, Balanus communis; 89, Operculum of Balanus Cranchii; 90, Chiton cinereus.

Apex, is the summit or tip of the spire, pl. 19, f. 65—*a*.

Base, the opposite extremity to the apex, pl. 19, f. 65—*b*. In simple univalves, such as the patellæ, it is the margin of the aperture, the tip of the vertex being the apex. Example of the base in a depressed shell, pl. 19, f. 72—*b*.

Body. The lower volution of the shell in which the aperture is placed, pl. 19, f. 65—*m*, *m*, *m*.

Front, is the place where the aperture is situated.

Back, the opposite of the front, opposed to that in which the aperture is situated.

Venter, the most bulging part of the front, pl. 19, f. 65—*c*.

Sides, the extreme edges of the shell, pl. 19, f. 65—*dd*. Right is the opposite to that in which the aperture is situated.

Aperture, the mouth or opening—*g*.

Beak, the elongated process at the base of many genera of univalves, pl. 19, f. 65. *i*, f. 75—*c*.

Canal, the inside of the beak, pl. 19, f. 65. *h*, 75—*b*.

Pillar or *columella*, is that process which runs through the spire, for the support of the volutions, f. 76—*a*.

Platted columella, is when there are folds at the base of the pillar lip, f. 66—*a*.

Pillar lip, a continuation of the enamelled process which

lines the inside of the shell, and is reflected on the base of the pillar: this also is termed the *inner lip*, pl. 19, f. 65—*k*.

Outer lip, the expansion of the body of the shell or outer edge of the aperture, pl. 19, f. 65—*l*.

Spire, is the whole volutions of the shell but the lower one, p. 19, f. 65—*e, e, e*. The remaining or lower one is the body, as above noticed.

Crowned or *coronated spire*, f. 66—*b, b, b*.

Whorl, is one of the volutions, or turnings of the spire.

Depressed spire, is when the spire is partly flattened, or entirely so, as exemplified in the shells of the genus planorbis, pl. 19, f. 72—*a*.

Involuted spire. Those univalve shells which have their volutions concealed inside of the body of the shell, as in the Nautili and Cypræa, p. 19, f. 70.

Reversed or *Heterostrophe spire*, is when the volutions of the spire revolve in a contrary direction to that of a common screw; in which case the aperture is on the right side, in place of the left, which is the case with all dextral shells, pl. 19, f. 71.

Detached spire, is when the volutions are not adhering together at their base, pl. 19, f. 67.

Suture of the spire a fine thread-like line, which runs spirally between the volutions, pl. 19, f. 65—*f, f, f, f, f*.

Sides, are the extreme edges of the shell, when the back or front is held next the observer, *d, d*.

Chambers, are the intervals, between the partitions or septa, of multilocular shells, pl. 19, f. 68—*bb*, &c., and also occur in simple univalves, f. 73.

Siphuncle is the tube which extends through some of the multilocular univalves, pl. 19, f. 68—*a*.

Septa, are partitions which divide the chambers in multilocular shells, f. 68—*c, c*, &c.

Varices, are transverse ribs which cross the volutions in some species of Murex, Triton, Buccinum, Cassis, &c., f. 69—*aa*.

Ribs, longitudinal and transverse projections, f. 75—*aa*; an example of the former; those in f. 74 illustrate the latter.

Teeth, some projecting laminæ in the aperture of univalves as represented in the aperture of pl. 19, f. 71.

Umbilicus, a perforation in the base of the body, of Helices, Trochi, &c., pl. 19, f. 76*—*a*.

PARTS OF BIVALVES.

Equilateral Shells, are those whose sides are alike, that is, both of a uniform size and shape, pl. 19, f. 85.

Inequilateral Shells, have unequal sides, and of different shapes, as in Donax Lutraria, &c., pl. 19, f. 77.

Summit, is the most elevated part of the shell, in which the hinge is usually situated, pl. 19, f. 77—*a*.

Base, the opposite extremity of the above, pl. 19, f. 77—*b*.

Anterior slope, is that side of the shell in which the ligament is situated, pl. 19, f. 77—*d*.

Posterior slope. The opposite of the above, and may be distinguished by viewing the shell in front, when the beaks point to the observer, pl. 19, f. 77—*e*.

Disk, the most prominent part of a valve, if lying with its inside undermost.

Cicatrix, the internal impression by which the animal was affixed to the shell, pl. 19, f. 77—*gg*. *f* 80; *d*, f. 81—*e*.

Lunule, the crescent-shaped depressions, in the posterior and anterior slopes, pl. 19, f. 77—*h*.

Ligament perforation, the circular aperture through which the ligament passes, as exemplified in the Anomiæ, pl. 19, f. 82—*a*.

Hinge, that part by which the shells are united. It is generally constructed of teeth; those of the one valve fitting into a socket in the opposite one. Some shells have no teeth, but are merely kept together by the ligament, in which case they are called *inarticulate*; when they have many teeth, they are called *multiarticulate*. The *Hinge* is that part which affords the most prominent generic distinction in bivalves.

Teeth of the hinge. The number, relative situation, and construction of these, afford the best specific distinctions in bivalves. A spatuliform central tooth is exhibited, pl. 19 f. 78.

Primary teeth, are those situated in the centre of the hinge. They are also termed the *cardinal teeth*, pl. 19, f. 77—*i*.

Lateral teeth, are those divergent from the *umbo*; are usually long, flat, and frequently double, or divided by a groove, pl. 19, f. 80—*a a*.

Double teeth. When teeth are very deeply cleft they are so termed.

Incurved teeth, are those which are bent round as in the Spondylus Gæderopus, Solen Siliqua, &c., pl. 19, f. 79—*c*.

Recurved teeth, such teeth as are bent backwards are so termed, as in the hinge of the Panopea Aldrovandi, pl. 19, f. 11; f. 81—*a a*.

Numerous teeth, are generally set in rows, either straight or curved as in pl. 18, f. 37, 38, 39.

Cavity of the hinge, is a pit or hollow in which the ligament is inserted in the *Ostrea*, &c., as may be seen in pl. 18, f. 20.

Ligament, is that cartilaginous substance by which the valves are held together, and is situated under the hinge of the shell, pl. 19, f. 77—*k*; f. 80—*b*. The cavity in which it is inserted, f. 81—*b*; f. 83—*b*.

Beak, the extreme point or summit of bivalves, which, for the most part, is turned aside, or downwards, so that it is seldom the highest part of the bivalve.

Umbo, that part situated immediately under the beak, pl. 19, f. 84—*a*.

Ears or *Auricles*, are those processes, situated on one or both sides of the beak, as in the scallops, pl. 19, f. 81—*c c*. *Superior ear*, 85—*a*. *Inferior ear*, *b*.

Margin, the extreme edges of the entire shell.

Crenulated margin. When the margin is notched as in the common edible cockle it is so termed, pl. 19, f. 80—*c c*.

Striæ, are fine thread-like lines, which traverse the exterior surface of shells, as exemplified, pl. 18, f. 62, 63.

Spines, are exterior acutely pointed, protrusions composed of shelly matter, pl. 19, f. 81—*d d*.

Right valve, may be distinguished by the anterior slope, pointing to the right hand, when the valve is viewed with the inside uppermost, pl. 18, f. 46—the under valve, in many species, is flattened, as in the ostrea.

Left valve, the opposite of the above, or where the anterior slope points to the left hand, pl. 18, f. 46.

Length of the shell—is always understood to be from that part in which the ligament is situated to the opposite extremity. Bivalve shells are called *longitudinal*, when their greatest length is from the hinge to the opposite margin, pl. 19, f. 80 and 85, from *a* to *b*; and *transverse*, when their breadth exceeds their length, f. 77, from *c* to *c*, and fig. 79, from *a* to *a*.

Byssus, or *beard*. An accessory filamentary appendage of a silky texture, by which some bivalve shells are affixed to rocks, stones, &c. as may be instanced in the common muscle.

Sides—the right and left parts of the valves; pl. 19, f. 77—*c, c*.

Ribs are longitudinal or transverse protuberances, generally running parallel to each other on the external surface of bivalves. *Longitudinal ribs*, pl. 19, f. 83—*a*. *Transverse ribs*, f. 84.

Accessory valves are small, unattached valves in the genus Pholas, pl. 19, f. 86—*a*.

Valves of Chitons are placed transversely along the back of the animal, usually eight in number, pl. 19, f. 90—*a, a*, &c. Fig. 91, a central valve; 92, a terminating valve.

Margin in Chitons, is a fleshy border which surrounds the valves, pl. 19, f. 90—*b*.

PARTS OF CIRRIPEDES.—Multivalves.

Operculum—consists of from two to four small valves, placed in the opening at top of the *Balani*, pl. 19, f. 88—*a*; f. 89.

Base—the part by which the shells of the genus Balanus, &c. are attached to rocks, pl. 19, f. 87—*c*; f. 88—*b*.

Ligament—a membranous substance, by which the valves are attached, pl. 19, f. 87—*d*.

Ridges—are convexities in the Balani, &c., sometimes longitudinal and at others transverse.

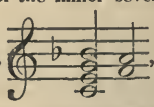
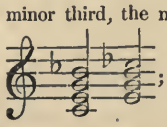
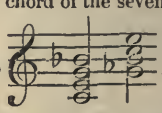
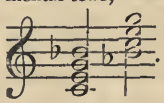
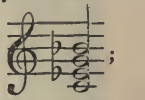
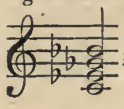
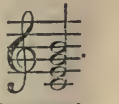
Peduncle, or *pedicle*—a sort of stem, or hollow membranaceous tube, on which the Anatifæ are seated, pl. 19, f. 87—*b*.

Feelers, or *tentacula*—are those arms by which the animals of the Balani and Anatifæ secure their food, pl. 19, f. 87—*a*.

CONCLAVE (*a room*); the place where the cardinals assemble for the election of the pope; also the electoral assembly of the cardinals themselves. Pope Gregory X., whose election had been delayed for three years, established, in the council at Lyons (1274), the regulations of the conclave. It was settled, that if the pope should die in a city where he had resided with his court, the cardinals present should not be obliged to wait longer than ten days for their absent brethren. After the lapse of ten days, all the cardinals present should assemble in the palace in which the pope had died. Here they were all to be shut up in one room (*conclave*), without partitions or curtains, which, with the exception of one outlet, was to be closed on all sides, so that no one should speak with them, nor be admitted into their presence, except those who were called, with the consent of all the brethren, for the purpose of assisting, in some way, in the election. No one was to be permitted either to send in a messenger, or to write to the cardinals; but a window was to be left open in the room, through which the necessary food could be handed to them. If, in three days after entering the conclave, they had not chosen a pope, they were, on the five following days, to receive but one dish at noon and in the evening; and, after this nothing but bread, wine, and water, till the election should take place. These regulations of Gregory X. have been observed in their essential provisions in recent times, though not always in every particular. As most of the popes have died in Rome, the conclave has usually been held in the Vatican, in the galleries of which, as many cells are built in a row as there are cardinals to be present. There the cardinals repair, two by two, the day after the funeral of the pope, or on the tenth day after his death, after having heard a mass, which is called *Missa Spiritus sancti*, and remain till the election is finished The conclave which chose pope Pius VII. was held

at Venice by the assembled cardinals, as Pius VI. died far from Rome.

CONCLAVIST; the companion, either lay or clerical, whom the cardinal is allowed to take with him into the conclave (q. v.) during the election of a pope, or to send for if he should fall sick. The conclavists are, in this case, subject to the same laws as the cardinals; they are not permitted to leave the conclave except in a case of severe sickness; they partake at the same table with the cardinals, and have a cell of the same size. The place of conclavist is honourable, and very much sought for. The conclavist of the cardinal who is chosen pope seldom fails to make his fortune. As every cardinal generally becomes a member of the committee of regency, consisting of three cardinals, who are changed daily, each of the conclavists of the cardinals thus engaged has an opportunity to display his talents before the cardinal and his colleagues, as secretary of the committee.

CONCORD (also called *accord*, from the Italian *accordare*, and this from the Latin *chorda*); an expression used in music. It denotes an association of sounds, founded on the natural relations of simultaneous tones. Upon this association depends all harmony; in fact, every proper chord is of itself harmony; hence, e. g., the expression *harmony of the dominant*. In its proper acceptation, harmony is the result of connected tones in consecutive chords. With regard to their simultaneous expression, however, tones differ in their relations. Some, by the mere act of being sounded together, convey to the ear a sense of pleasure. They harmonize in themselves, and are therefore termed *consonant chords, or concords*. Take, for example, one tone as the fundamental tone; then, to form a concord, all the other tones must harmonize with it and with each other. The idea of a chord has no reference to the number of consonant tones of which it is formed. The most simple and least perfect concord is made by the combination of two tones, and is formed by connecting the interval of the third with the fundamental tone. The most perfect consonant chord is the harmonic triachard, which is formed by the addition of another third, and constitutes the perfect fifth from the fundamental tone: it is usually termed the *dominant*. From the character of the first third, or mediant, these combinations are either major or minor; thus major C, E, G, or minor, C, E flat, and G. The minor triachord is to be distinguished from the diminished triachord, which, by some, is called the *false* or *dissonant*, and is formed by two minor thirds, or by the fundamental tone and the minor third and minor fifth; thus, C, E, flat, G, flat. There is also a redundant triachord, constituted by two major thirds. By the transposition of the tones composing these triachords into higher or lower octaves (changing the positions or inverting the intervals), all other consonant chords are formed. It is usual to fix the designation of chords by counting the intervals ascending. Thus arises, 1. the chord of the sixth (hexachord), in which the fundamental tone is placed an octave higher, so that the third becomes a fundamental tone; the fifth is then the third, and the transposed fundamental becomes the sixth; thus, E, G, C, designated by the figure 6. 2. The chord of the fourth and sixth, where the fundamental tone and its third are both placed in a higher octave, so that the fifth becomes the fundamental, the original fundamental is changed to the fourth, and the transposed third becomes the sixth. Hence the name, from the characteristic intervals and the notation thus $\frac{6}{4}$. The dissonant chords are first obtained by adding to the triad another third, which, consequently, stands in the relation of a seventh to the fundamental, and produces a quadrichord. The seventh is the dissonant interval, and to relieve the ear, requires to be resolved. The chord of the seventh is formed of the fundamental, the third, the fifth, and the seventh. The first, and most usual, is constituted by the major triad with the minor seventh; thus C, E, G, B flat. It is called the *principal*, sometimes the essential chord of the seventh, and is simply designated thus, 7. It rests upon the dominant of that key in which it is to be resolved; for the minor seventh resolves itself downwards, thus,  , while the major dissonant ascends. Hence it may also be called the *dominant chord of the seventh*, or the *chord of the dominant seventh*. If we transpose the intervals of these chords, in the same manner as with the triachords, we form, 1. the chord of the fifth and sixth $\left(\text{denoted by } \frac{6}{5}\right)$, consisting of the minor third, the minor fifth and major sixth, thus,  ; 2. the chord of the third and fourth $\left(\frac{4}{3}\right)$, in which the seventh and the fundamental tone of the essential chord of the seventh become the third and fourth,  ; 3. by further transposition, the chord of the second is formed, by which the seventh, with the fundamental tone, forms the interval of the second, thus,  . The other chords of the seventh, which Godfr. Weber terms *by-chords of the seventh*, in opposition to *principal chords of the seventh*, are, the chord of the seventh, formed by the minor triachord and the minor seventh,  ; again, by the diminished triachord, with the subsisting minor seventh of the chord of the seventh,  ; finally, the chord of the seventh, with the major triachord and seventh major,  .

By the transposition of these by-chords of the seventh are formed the chords of the fifth and sixth, the third and fourth, and the chord of the second. We have thus, as appears from this review, nine fundamental chords, viz., two simple accords, three triachords, and four chords of the seventh (the essential chord and the by-cords of the seventh). However complicated the harmony may be, it is reducible to these chords. There is yet a five-toned chord, the *quint-chord* which is a union of simultaneous tones,

and is formed by the addition of another third (major or minor) to the chord of the seventh, which, consequently, makes the ninth from the fundamental tone, and is termed the *chord of the ninth*. But if, from the adverse concurrence of the seconds, we omit the fundamental tone, as is usual in close harmony, and transpose the notes as above, we obtain thus the proper modifications of the quadrichord; for example, the enharmonic chord of C, E flat, G flat, A; C sharp, E, G, B. These concords, then, are capable of being presented in the most diversified forms, in immediate collision, or broken, so that the tones constituting them are heard in succession. Further, the intervals may be confined to one octave, or distributed through distant and different octaves. This forms the groundwork and the distinction between close and dispersed harmony, according to the close or dispersed position of the chords. Further, the application of the intervals composing the chords is governed by the variety of positions, inasmuch as the music may be adapted for two, three, four, five voices or parts. In the former, some intervals must be omitted; in the latter, doubled. One of the first systems of chords was offered by Rameau, grounded on the ideas of D'Alembert, and afterwards elucidated in Marpurg's system, which much resembled Vogler's. It has been more recently elucidated by Turk. Another is by Tartini, which is given in Rousseau's *Dictionaire de la Musique*. The one deduces and explains the chords from fundamental keys (of the base), the other from melody (the upper tones). Another very simple system of chords is that of Kirnberger, which is much followed by Godfr. Weber, in his treatise on thorough-base. From music, the idea of harmony is transferred to colours, and we may speak of the *harmony* of colours, as opposed to the harsh and dazzling contrast of them, which is avoided by a judicious middle tone of colouring.

CONCORD; a post-town of the United States, in New Hampshire, and the seat of the state government; 53 miles N. N. W. Boston; lon. 71° 29′ W.; lat. 43° 12′ N.: population, in 1810, 2391; in 1820, 2838. It is pleasantly situated, extending along the western bank of the river Merrimack nearly two miles in length.

CONCORD, Form of (*formula concordiæ*); one of the most important doctrinal books of the Protestant church, composed at the command of Augustus, elector of Saxony, by several distinguished theologians. Augustus had long suspected the existence of secret adherents to the doctrine of Calvin; and, being confirmed in this suspicion by investigation, he thought a book of concord, that is, of union, which should definitively settle the form of doctrine to be received, would be the best means for terminating the religious troubles. Twelve divines were invited to Lichtenburg, who, in the assembly afterwards convoked at Torgau, examined and settled the principal points, and finished the work in Kloster-Bergen, in 1577; after which followed the solemn signing by the several electors, princes, counts, states of the empire, and the printed publication of the work in 1580. It is said that this affair cost the elector about £12,000. See *Symbolical Books*.

CONCORD, Goddess of. See *Concordia*.

CONCORDANCE; a book containing the principal words in the Holy Scriptures, in alphabetical order, with a designation of the places in which they are to be found. They are concordances of subjects and of words; and, for both kinds, either the Greek or Hebrew text, or a universally received translation, may serve as a basis. Works of this kind are useful for the exegetical theologian, because the comparison of parallel passages is one of the most important auxiliaries of exegesis; and not less so for the preacher, because they enable him to examine, at once, all the passages of scripture which treat of the same subject. The first work of this kind was published by Hugo Sancto Caro, who used the universally-received Latin translation of the Bible, called the *Vulgate*. Some of the most approved concordances in English are those of Cruden, Butterworth, Brown, and Taylor. The name *concordance* might be given, without impropriety, to similar indices of other works, as the writings of Homer and Shakspeare. In fact, it is so applied in Germany. The index of Samuel Ayscough to Shakspeare is a concordance.

CONCORDATE; a convention between the bishop of Rome, as head of the church, and any secular government, for the settling of ecclesiastical relations. Treaties which the pope, as a secular sovereign, concludes with other princes respecting political concerns, are not called *concordates*. One of the most important of the earlier concordates is that of Worms, called, also, the *Calixtine Concordate*, made in 1122, between pope Calixtus II. and the emperor Henry V., in order to put an end to the long contest on the subject of investiture, and which has since been considered a fundamental ordinance in respect to the relations between the Catholic church and the government in Germany. Most of the concordates have been extorted from the popes by the different nations or governments. This was done as early as the 15th century; for, when the council of Constance urged a reformation of the papal court, Martin V. saw himself obliged, in 1418, to conclude concordates with the Germans, and soon afterwards, also, with other nations. The popes, however, succeeded, even in the 15th and 16th centuries, in concluding concordates for their advantage. This was the case with the concordates of Aschaffenburg. That, also, which was made by Leo X. and Francis I. of France (1516), was chiefly to the advantage of the pope. In later times, in particular, towards the end of the 18th century, the papal court could not any longer maintain a struggle with the spirit of the times and with the secular powers, and was obliged to resign many privileges by concordates. Bonaparte, when first consul of the French republic, concluded a concordate with pope Pius VII., July 15, 1801, which went into operation in April, 1802. It re-established the Catholic church in France, and has become the basis of the present ecclesiastical constitution of that country. The government obtained by it the right to appoint the clergy; the public treasury gained by the diminution of the large number of metropolitan and episcopal sees to sixty; the pope was obliged to give up the plan of restoring the spiritual orders, and the influence which he exercised by means of delegates, but retained the right of the canonical investiture of bishops and the revenues connected with this right. The interests of religion suffered by this compact, inasmuch as most of the dioceses became now too large to be properly administered; and the lower clergy, the very soul of the church, who were in a poor condition before, were made entirely dependent on the government.

Louis XVIII. concluded at Rome, with Pius VII. (July 11, 1817), a new concordate, by which that of 1516, so injurious to the liberties of the Gallican church, was again revived; the concordate of 1801 and the *articles organiques* of 1802 were abolished; the nation subjected to an enormous tax by the demand of endowments for forty-two new metropolitan and episcopal sees, with their chapters and seminaries; and free scope afforded to the intolerance of the Roman court by the indefinite language of article ten, which speaks of measures against the prevailing obstacles to religion and the laws of the church. This revival of old abuses, this provision for the luxury of numerous clerical dignitaries at the expense of the nation, could

please only the ultra-royalist nobility, who saw in it means for providing their sons with benefices. The nation received the concordate with almost universal disapprobation; voices of the greatest weight were raised against it (Grégoire, *Essai historique sur les Libertés de l'Eglise Gallicane*, Paris, 1818; Lanjuinais, *Appréciation du Projet de Loi rel. aux trois Concordats*, 5th ed., Paris, 1818; De Pradt, *Les quatre Concordats*, Paris, 1818, 3 vols.); and the new ministers saw themselves obliged to withdraw their proposition.

The pope was more fortunate in the concordate made with Naples (Feb. 16, 1818), at Terracina, in which stipulations were made for the exclusive establishment of Catholicism in this kingdom; for the independence of the theological seminaries on the secular power; the free disposal of benefices to the value of 12,000 ducats, in Naples, in favour of Roman subjects; the reversion of the revenues of vacant places to the church; unlimited liberty of appeal to the papal chair; the abolition of the royal permission, formerly necessary for the pastoral letters of the bishops; the right of censorship over books; besides many other highly important privileges. The king obtained the right to appoint bishops, to tax the clergy, to reduce the number of the episcopal sees and monasteries, which existed before Murat's reign. The quiet possession of the estates of the church, which had been alienated, was also secured to the proprietors.

In the concordate concluded with Bavaria, July 5, 1817, two archbishoprics were established for the 2,400,000 Catholics in Bavaria. These were Munich (with the bishoprics of Augsburg, Passau, and Ratisbon) and Bamburg (with the bishoprics of Wurzburg, Eichstadt and Spire). Seminaries, moreover, were instituted and provided with lands; the nominations were left to the king, with the reservation of the papal right of confirmation; the limits of the civil and ecclesiastical jurisdiction were precisely settled, and the erection of new monasteries was promised. This concordate was published in May, 1818, together with the new political constitution, by which all apprehensions for the Protestant church in Bavaria were allayed. (Respecting the concordate between Prussia and the pope, see *German Church* and *Prussia*.) The other German princes have formed a plan for a common concordate with the pope.

On the whole, the contest which has been carried on for more than 800 years between the secular power and the church is as little settled as it was in the times of Gregory VII. and the emperor Henry IV., and the concordates are to be considered only as temporary agreements, which are followed as long as either party is obliged or thinks it best to observe them. In fact, it is vain to think of putting an end to the dispute, while secular governments maintain that it rests with them to appoint the officers and instructors of the people, and the pope maintains that the authority of the church is prior in time and superior in degree to any other. The light in which the Roman court views the cessions made in concordates appears from a letter of pope Innocent I., in 1416: *Ergo quod pro remedio necessitas reperit, cessante necessitate debet utique cessare, quia alius est ordo legitimus, alia usurpatio, quam ad præsens tantum fieri tempus impellit.* The governments, on the contrary, add reservations to the concordates, as in the case of the articles which the French government prefixed to the concordate of 1801, before it was promulgated. Against the appeal to a divine institution, on which the pope founds his authority, the sovereigns maintain the following claims:—1. The sovereign of the state is, at the same time, the secular head of the church, and all the power of the church to make regulations and appoint clerical functionaries has been given by him, and remains under his superintendency; 2. the temporal possessions of the church are properly subject to the state, which has a right to prevent them from becoming excessive; 3. the secular government can prohibit such acts of worship as are opposed to the interest and peace of the state, and interfere with the rights of other religious societies; 4. the state has the right of protecting new sects; 5. the civil rights of subjects (even with regard to the validity and consequences of marriage) are to be exclusively regulated by the laws of the state. It is easily understood that no such contest between church and state can take place where the church does not claim any political authority, and the sovereign does not consider religion as an instrument for state purposes.

CONCORDIA; or concord, personified and worshipped as a goddess in Rome, where she had several temples, the most important of which was that in the capitol, erected by Camillus. An annual feast was celebrated, in her honour, the 16th of January. She was represented with wreaths of flowers on her head, and in one hand two cornucopiæ, in the other, a bundle of rods or a pomegranate. Symbolically, Concordia was represented by two hands clasped together, or by the caduceus. See *Grecian Mythology*.

CONCRETE; a technical word in logic. If we conceive of certain qualities as existing in an object, we then regard them, according to philosophical language, *in concreto;* but if we think of them separately from the object, we then regard them *in abstracto;* for example, *a just man* is a concrete conception, but *justice* is an abstract idea. See *Philosophy*.

CONCRETIONS, Morbid, in animal economy; hard substances that occasionally make their appearance in different parts of the body, as well in the solids as in those cavities destined to contain fluids; in the former case, they are denominated *concretions* or *ossifications;* in the latter, *calculi*. The concretions that make their appearance in the solids of the animal body are denominated *pineal* concretions, from their being found in that part of the brain called the *pineal gland;* or *salivary* concretions, as being discovered, occasionally, in the salivary glands; or *pancreatic* concretions, which are hard substances found in the pancreas; or *pulmonary* concretions, which have been sometimes coughed up by consumptive persons; or *hepatic* concretions, of which the liver is sometimes full. Concretions have also been found in the *prostate*. These have all been examined by chemists, and found to consist of phosphate of lime and other substances. Concretions have been discovered in the intestines and stomach of man, but more frequently in the bodies of other animals. Those found in the intestines of a horse were examined by Fourcroy, and found to consist of magnesia, phosphoric acid, ammonia, water, and animal matter. See *Calculi*.

CONCUBINAGE; the cohabitation of a man with a concubine. Among the Greeks, concubinage was allowed even to married men: the number of their concubines, also, was unlimited. Among the Romans, concubinage was neither unlawful nor disgraceful. It was, moreover, formally permitted to unmarried men, by the *Lex Julia*, and by the *Lex Papia Poppæa*, but with the provision, that it should be limited to a single concubine, and that only women of mean descent, as freed women, actresses, and the like, should be chosen for the purpose. The children begotten in concubinage were not considered as legitimate, but were called *natural*, and the right of inheritance of the concubine and her children was very much limited. With the introduction of Christianity, concubinage ceased; and, indeed, Con-

stantine the Great made laws against it. The *Code Napoléon* did not expressly forbid concubinage, but the lawful wife could sue for a divorce (since the restoration of the Bourbons, only for separation), in case of the introduction of a concubine by her husband into their common residence. The Prussian code does not allow concubinage, as some authors have asserted, but it establishes two kinds of marriages, one of which does not confer the rank, &c., of the husband on the wife, nor give the children the same rights as those enjoyed by the children born in the other kind of marriage. This form of marriage seems to have been allowed by the code chiefly for the benefit of poor officers of government, whose rank far exceeds their salary; but, though it stands in the code, it never has received from the king the authority of law. The ruling family, however, sometimes contract such marriages. The present king is married to the princess of Lignitz in this form. There is no want of legality in the connexion; it is merely to prevent the wife from becoming a queen, and her children royal princes.

CONDAMINE, Charles Marie la, a naturalist, was born at Paris in 1701, and died at the same place in 1774. With an ardent spirit and a powerful frame, the young Condamine, who had entered the military profession, gave himself up to pleasure; but he soon renounced the military career, and devoted himself to the sciences. He entered the academy as *adjoint chimiste*. His desire of knowledge induced him to apply himself to several sciences, without advancing very deeply in any particular one. After he had visited the coasts of Asia and Africa on the Mediterranean, he was, in 1736, chosen, with Godin and Bouguer, to determine the figure of the earth, by a measurement to be made in Peru. (See *Earth.*) He there made the discovery, that mountains attract heavy bodies, and give them a direction different from that which they would take according to the simple law of gravity—a truth which was afterward confirmed by Maskelyne and Cavendish. Having finished his labours in America, and escaped a thousand dangers, he returned to his native land, after an absence of eight years, and soon after went to Rome, where Benedict XIV. gave him a dispensation to marry one of his nieces. Of his curiosity the following anecdote is related. At the execution of Damiens, he mingled with the executioners, in order to let no circumstance of this horrible manner of death pass unobserved. They were about to send him back, but the chief executioner, who knew Condamine, prevented them with these words: "*Laissez, messieurs, c'est un amateur.*" His principal works are his account of his travels, his work on the figure of the earth, and that on the measurement of three degrees of the meridian in the equatorial regions. Besides these he published treatises on inoculation for the small-pox.

CONDE; a fortress of France, in the department du Nord, nine leagues and a half S. E. of Lisle. Inhabitants, 6,080. It is, according to the French military terminology, a *place de guerre de premiere classe*. During the Revolution, it was called *Nord-Libre*. Its port is much frequented.

CONDE, Louis de Bourbon, prince of (the great Condé); born in 1621; a general of distinguished talents, great advantages of person, and very attractive manners. During the life of his father, he bore the title of *duke d'Enghien*. He immortalized this name at the battle of Rocroi, in which, at the age of 22, he defeated the Spaniards (1643). After he had arranged every thing for the battle, on the evening previous, he fell into so sound a sleep, that it was necessary to awake him when the time for engaging came on. Wherever he appeared he was victorious. He was so fortunate as to repair the consequences of a defeat of marshal Turenne. He besieged Dunkirk in sight of the Spanish army, and gained this place for France, in 1646. He was equally fortunate in putting a stop to the civil war which Mazarin had occasioned, who was afterwards obliged to seek the support of Condé. Jealous of the glory of the prince, and fearing his pride, Mazarin, in 1650, caused his deliverer to be brought captive to Vincennes, and did not restore him his freedom until after the expiration of a year. The offended Condé now entered into negotiations with Spain, and fought against his native country with such success, that he advanced almost to the gates of Paris. He obtained possession of the neighbouring places, while Turenne was approaching the capital in order to cover it. Both generals fought with great valour, very near the suburb St Antoine, and added to their former reputation (July 2, 1652). A short time after peace was concluded, in which, however, Condé did not concur, but went to the Netherlands. The peace of the Pyrenees in 1659, at last restored this great general to France. After Turenne's death, in 1675, he commanded, for a long time, the French army in Germany. The gout at last compelled him to retire to his beautiful estate at Chantilly, near Paris, where he devoted himself to the sciences. Here he was visited by Corneille, Bossuet, Racine, Boileau, Bourdaloue, who enjoyed his conversation as much as he did theirs. He died in 1687 at Fontainebleau. In the church of St Louis, at Paris, a monument was erected to him.

CONDE, Louis Joseph de Bourbon, prince of; born at Chantilly, in 1736; only son of the duke of Bourbon and the princess of Hesse-Rheinfels. By the death of both his parents he came, in his fifth year, under the guardianship of count Charolais, his uncle. The prince was educated with great strictness, and made some progress in the sciences. In 1753, he married the princess of Rohan-Soubise, who in 1756, bore him the prince Bourbon-Condé. In the seven years' war, he distinguished himself by his courage and skill, and, in 1762, gained a victory, at Johannisberg, over the hereditary prince of Brunswick. True to the old constitution, he opposed Louis XV., on account of the introduction of a newly formed parliament, and was, on this account, banished, but soon recalled. His leisure he devoted to study, in friendly intimacy with the most learned men of his time, and to the embellishment of Chantilly, where Paul I. visited him. He was wounded in a duel with count Agoult. In the revolution, he emigrated, in 1789, to Brussels, and from thence to Turin: he afterwards formed in 1792, at Worms, a little corps of emigrant nobility, 6806 men strong, which joined the Austrian army under Wurmser. After an interview with Gustavus III., of Sweden, at Aix-la Chapelle, in 1791, on the subject of measures to be undertaken, he was summoned at Worms, by a deputy of the national assembly, and by the king himself, to return to France within fourteen days, under penalty of the loss of his estates. With the other princes, he returned an answer of refusal, from Coblentz. On the breaking out of the war, his corps distinguished itself; but the Austrian plan of operations did not agree with the views of the emigrants; therefore the connexion of prince Conde with Pichegru had no results. In 1795, he entered with his corps into the English service. In 1796, he fought in Suabia. In 1797, he entered the Russian service, and marched with his corps to Russia, where he was most hospitably received into the residence of Paul I.; and returned, in 1799, to the Rhine, under Suwaroff. In 1800, after the separation of Russia from the coalition, he re-entered the English service. The campaign of 1800 ended the military

career of the prince. He lived in England till 1813, in which year his second wife, the princess of Monaco, died. He returned to Paris, May 14, 1814, received the 10th regiment of the line, and the office of colonel-general of infantry, as also that of *grand maitre de France*, and the protectorate of the order of St Louis. He attended the celebrated royal council, March 17, 1815, fled with the king to Ghent, and returned with him to Paris in July, where, being appointed president of a *bureau* of the chamber of peers, he remained some time, but at last retired to Chantilly, where he had formerly written the interesting *Essai sur la Vie du Grand Conde, par L. J. de Bourbon, son 4me Descendant*, of which two editions have appeared since 1806. He died at Paris in 1818. His grandson was the duke d'Enghien.

CONDE, Louis Henry Joseph, duke of Bourbon, son of the preceding, born April 13, 1756, was educated to the profession of arms. He had hardly passed the age of childhood, when he was inspired with the most violent passion for Louisa Maria Theresa of Orleans. It was resolved that he should travel two years, and then receive the hand of the lady; but the impatience of the prince would not admit of this delay. He carried off his mistress from the convent where she resided, married her, and, in 1772, she bore him the prince d'Enghien. Condé's impetuosity occasioned a duel between him and the count d'Artois, in 1778. This was followed by his banishment to Chantilly. He likewise quarrelled with his wife, and, in 1780, separated himself from her; she died in 1822. In 1782, he was present, with the count d' Artois, at the siege of Gibraltar, distinguished himself there, and was appointed marshal. The pride of his name, the ardour of his character, and his confidence in the power of the king, caused him, in the beginning of the revolution, to treat with contempt a people in a state of violent fermentation. He continually advised the use of force. In 1789, he emigrated, with his father, to Turin, joined the corps of French emigrants, and, in 1792, 1793, and 1794, showed the ancient courage of the Condés. In 1795, he embarked at Bremen for Quiberon, in order to make a diversion in La Vendée, but was obliged to return to England without success. In 1797, he went with the corps to Russia, and, in 1799, returned to the Rhine. After the dissolution of the Royal French army, he went to England in 1800, where he lived till May 1814. May 15, 1814, he was appointed, at Paris, colonel-general of the light-infantry, and on Napoleon's return from Elba, in 1815, received the chief command in the departments of the west. But he was obliged by a convention, to embark from Nantes. He sailed to Spain, whence he returned, in August, through Bordeaux and Nantes to Paris. He put an end to his own life at his chateau of St Leu, Aug. 27, 1830. He is supposed to have committed this act while labouring under derangement produced by the revolution which had just taken place, and had promised to repair to Paris to take the oath to the new government, on the morning when he was found dead in his chamber, suspended by his own handkerchief. By his will, written with his own hand, and dated Aug. 30, 1829, his whole fortune passes to the duke d'Aumale, son of Louis Philippe, king of the French, and to Mrs. Dawes, baroness de Feuchères, an English woman with whom he lived. The legacies to this lady, including several chateaux and seats were valued at about fifteen millions of francs, the residue of his fortune being left to the duke d'Aumale. This will was disputed by the princes of Rohan, on the ground that the baroness de Feucheres had used improper influence over the prince; and it was contended by their counsel that the prince had been murdered by persons interested. It was not till Feb. 22, 1832 that the judgment of the court was finally pronounced in favour of the duke d'Aumale and madame Feucheres.

CONDENSATION. Besides the mechanical powers (see *Condenser*), there are also chemical means for converting gaseous fluids into liquids by condensation; for example steam into water, by means of cold. Volta gives the name of *condenser o electricity* to an instrument invented by him for collecting and measuring electricity in cases in which it is feebly developed; and an apparatus for the collection of sensible caloric is called a *condenser of caloric*.

CONDENSER; a pneumatic engine, or syringe, whereby an uncommon quantity of air may be crowded into a given space; so that sometimes ten atmospheres, or ten times as much air as there is at the same time in the same space without the engine, may be thrown in by means of it, and its egress prevented by valves properly disposed. See *Pneumatics*.

CONDILLAC, Stephen Bonnot de, among the French the founder of the sensual system, was born in 1715, at Grenoble, and lived like his brother, the abbe Mably, from his youth devoted to study. His *Essai sur l'Origine des Connaissances humaines* (1746, 2 vols.) first drew the attention of the world to a thinker, who, with much acuteness of mind, sought to explain, by the law of the association of ideas, almost all the phenomena of the human mind. Although Locke's discoveries in the department of psychology, founded upon experience, might have had an influence on this work, yet no one can deny to Condillac the merit of having made more profound inquiries on many points. He himself, however, thought that he had not sufficiently explained the first principles of the faculties of the human mind, and therefore wrote the *Traite des Systemes* (1749, 2 vols.), in which he frequently referred to more accurate observations. Any one would misunderstand Condillac, who should believe that he disapproved of all systems; but instead of those maxims and theories which Des Cartes, Spinoza, Malebranche, &c., had laid down as the basis of their speculations, he demanded observations of the simplest kind. His *Traite des Sensations* (1754, 2 vols.) is interesting for the ingenious manner, in which he has explained the consciousness of impressions on the senses. Mortified by the supposition that he had followed the course of ideas in Diderot's and Buffon's works, he wrote his *Traite des Animaux* (1775), in which he refuted Buffon's opinions, by principles which he had advanced in his *Traite des Sensations*. The sagacity and the clearness which distinguish all Condillac's writings obtained for him the distinction of being chosen instructor of the infant duke of Parma, nephew of Louis XV. The intimate friendship which subsisted between him and his colleague, M. de Kerralio, made this situation the more agreeable. To this cause we are indebted for his acute work, the *Cours d'Etudes* (1755, 13 vols.), in which with his peculiar talent of explanation, he investigates the external signs of ideas. Thus his Grammar necessarily became a universal one; his Art of Writing, a course of instruction for giving the most suitable expression to trains of thought. With the same view, he composed his *L'Art de juger*, and *L'Art de penser*, which constitute a part of the *Cours d'Etudes*. His history has been less successful than his other works. Considered apart from the tameness of its execution, it might be objected to it, that it represents occurrences in subservience to pre-established theories. Condillac returned, after the completion of the education of the young prince, to Paris, where, in 1768, he was ad-

mitted into the French academy, which, however, he did not visit again after the day of his entrance. His work, *Le Commerce et le Gouvernment consideres relativement l'un a l'autre* (1776), which is an application of his analytical method to several problems in the administration of the state, met, however, with little approbation. His logic, the last of his works, he wrote by request, in 1780, as a manual for the Polish schools. The tracing back of the thoughts to their simplest beginnings, as the most certain means of finding the truth, is urgently enjoined by him. Condillac died at his estate of Flux, near Bougenci, Aug. 3, 1780. His *Langue des Calculs* first appeared in 1798. The collection of his works, the revision of which he had begun, appeared in 1798, in 23 vols., and again the same year, in 35 vols. A later edition, of 1803, consists of 33 vols., 12mo. See *French Philosophy*.

CONDITION. See *Bond*.

CONDOR. The popular name of the great vulture of the Andes, formed by a mispronunciation of the Indian name *kunter*, which, according to Humboldt, is derived from another word in the language of the Incas, signifying *to smell well*. This species (*vultur gryphus*, L., *hodie cathartes gryphus*) belongs to the vulturine family of diurnal rapacious birds, and the genus *cathartes* of Illiger, &c., which is distinguished by the following characters:—the bill is elongated and straight at base; the upper mandible is covered to the middle by the cere; the nostrils are medial, approximate, oval, pervious, and naked; the tongue is canaliculate, with serrated edges; the head is elongated, depressed and rugous; the tarsus rather slender; the lateral toes equal; the middle toe is much the longest, the inner free, and the hind one shortest; the first primary is rather short, the third and fourth are longest.

The natural history of the condor was in a fair way to rival the ancient fables of griffins, basilisks and dragons, or even of exceeding the roc of Sinbad the Sailor, in extravagant exaggeration, until that admirable and judicious observer, Von Humboldt, placed it upon the basis of truth. By divesting this bird of all fictitious attributes, and bringing it into its proper family, he certainly spoiled a great number of romantic narratives of their principal embellishment; but he amply compensated therefor, by giving this additional proof, that there are no monsters in nature, and that even when she appears to depart most from the ordinary standard, as to size, situation, or habits, her beings are parts of a single plan, in which all the agents are modifications of one great type. We therefore feel grateful to the indefatigable naturalist, whose residence of seventeen months in the native mountains of the condor enabled him daily to observe its peculiarities and habits, and to furnish us with satisfying statements of realities, in place of the wild and inconclusive figments, so long imposed upon mankind. His careful measurements establish the fact, that the wonderfully gigantic condor is not generally larger than the lammergeyer, or bearded vulture of the Alps, which it closely resembles in various points of character. We shall soon see whether the rational student has lost by stripping the condor of qualities bestowed upon it solely by credulous ignorance, and whether the truth to be told of its history be not more interesting than all the fictions. Upon a chain of mountains, whose summits, lifted far above the highest clouds, are robed in snows coeval with creation, we find a race of birds, whose magnitude and might, compared with others of the feathered kind, is in something like the proportion of their huge domiciles to earth's ordinary elevations. Above all animal life, and at the extreme limit of even Alpine vegetation, these birds prefer to dwell, inhaling an air too highly rarified to be endured, unless by creatures expressly adapted thereto. From such immense elevations they soar, still more sublimely, upwards into the dark blue heavens, until their great bulk diminishes to a scarcely perceptible speck, or is lost to the aching sight of the observer. In these pure fields of ether, unvisited even by the thunder-cloud—regions which may be regarded as his own exclusive domain—the condor delights to sail, and with piercing glance surveys the surface of the earth, towards which he never stoops his wing, unless at the call of hunger. Surely this power to waft and sustain himself in the loftiest regions of the air; his ability to endure, uninjured, the exceeding cold attendant on such remoteness from the earth; and to breathe, with ease, in an atmosphere of such extreme rarity; together with the keenness of sight, that, from such vast heights, can minutely scan the objects below,—are sufficiently admirable to entitle the condor to our attention, though we no longer regard it as a prodigy, or as standing altogether solitary in the scale of creation.

Notwithstanding that the condor is a lover of the clearest and purest air, it must be confessed that he is a carrion bird, and is quickly lured to the plains by the sight or scent of a carcass, especially of a sheep or ox. To such a feast considerable numbers repair, and commence their filthy banquet by first plucking out the eyes, and then tearing away the tongue of the animal, their favourite delicacies; next to these, the bowels are the morsels most eagerly sought for, and devoured with that greedy gluttony which distinguishes the whole vulture tribe. The appetite of these birds seems to be limited only by the quantity of food that can be gorged into their stomachs; and when thus overloaded, they appear sluggish, oppressed, and unable to raise themselves into the air. The Indians profit by this condition to revenge themselves on the condors for the many robberies which they commit upon their flocks, and, watching while they eat, until flight has become exceedingly difficult, attack and secure them by nooses, or knock them down with poles, before they can get out of the way. If the condor, thus loaded, succeeds in rising a short distance from the ground, he makes a violent effort, kicking his feet towards his throat, and relieves himself by vomiting, when he soon ascends out of reach. Many, however, are surprised, and captured or killed before they are able to ascend. But the condor does not exclusively feed upon dead or putrefying flesh; he attacks and destroys deer, vicunas, and other middling-sized or small quadrupeds; and, when pinched by hunger, a pair of these birds will attack a bullock, and, by repeated wounds with their beaks and claws, harass him, until, from fatigue, he thrusts out his tongue, which they immediately seize, and tear from his head; they also pluck out the eyes of the poor beast, which, if not speedily rescued, must soon fall a prey to their voracity. It is said to be very common to see the cattle of the Indians, on the Andes, suffering from the severe wounds inflicted by these rapacious birds. It does not appear that they have ever attacked the human race. When Humboldt, accompanied by his friend Bonpland, was collecting plants near the limits of perpetual snow, they were daily in company with several condors, which would suffer themselves to be quite closely approached without exhibiting signs of alarm, though they never showed any disposition to act offensively. They were not accused, by the Indians, of ever carrying off children, though frequent opportunities were presented, had they been so disposed. Humboldt believes that no authenticated case can be produced, in which the

lammergeyer of the Alps ever carried off a child, though so currently accused of such theft, but that the possibility of the evil has led to the belief of its actual existence. The condor is not known to build a nest, but is said to deposit its eggs on the naked rocks. The eggs are reported to be altogether white, and three or four inches long. When hatched, the female is said to remain with the young for a whole year, in order to provide them with food, and to teach them to supply themselves. In relation to all these points, satisfactory information still remains to be desired. We have seen that hunger impels the condors to descend to the plains, and it is also true, that they are occasionally seen even on the shores of the southern ocean, in the cold and temperate regions of Chile, where the Andes so closely approach the shores of the Pacific. Their sojourn, however, in such situations, is but for a short time, as they seem to require a much cooler and more highly rarified air, and prefer those lofty solitudes where the barometer does not rise higher than sixteen degrees. When they descend to the plains, they alight on the ground, rather than upon trees or other projections, as the straightness of their toes renders the first mentioned situation most eligible. Humboldt saw the condor only in New Grenada, Quito, and Peru, but was informed that it follows the chain of the Andes from the equator to the seventh degree of north latitude, into the province of Antioquia. There is now no doubt of its appearing even in Mexico, and the south-western territory of the United States.

The head of the male condor is furnished with a sort of cartilaginous crest, of an oblong figure, wrinkled, and quite slender, resting upon the forehead and hinder part of the beak, for about a fourth of its length; at the base of the bill it is free. The female is destitute of this crest. The skin of the head, in the male, forms folds behind the eye, which descend towards the neck, and terminate in a flabby, dilatable or erectile membrane. The structure of the crest is altogether peculiar, bearing very little resemblance to the cock's comb, or the wattles of a turkey. The auricular orifice is of considerable size, but concealed by folds of the temporal membrane. The eye, which is peculiarly elongated, and farther distant from the beak than the eagle's, is of a purple hue, and very brilliant. The neck is uniformly marked by parallel longitudinal wrinkles, though the membrane is not so flabby as that covering the throat, which appear to be caused by the frequent habit of drawing the neck downwards, to conceal or warm it within the collar or hood. The collar, in both sexes, is a fine silken down, forming a white band between the naked part of the neck and beginning of the true feathers, and is rather more than two inches broad, not entirely surrounding the neck, but leaving a very narrow naked space in front. The rest of the surface, the back, wings, and tail, are of a slightly grayish-black, though sometimes they are brilliantly black; the feathers are triangular, and placed over each other tile-wise. Humboldt never saw male condors with white backs, though descriptions of such have been given by Molina and others. The primaries are black; the secondaries, in both sexes, are exteriorly edged with white. The wing coverts, however, offer the best distinction of the sexes, being grayish-black in the female, while, in the male, their tips, and even half of the shafts, are white, so that his wings are ornamented with beautiful white spots. The tail is blackish, wedge-shaped, rather short, and contains twelve feathers. The feet are very robust, and of an ashen blue colour, marked with white wrinkles. The claws are blackish, very long, and but slightly hooked. The four toes are united by an obvious but delicate membrane; the fourth is the smallest, and has the most crooked claw. The following are the dimensions of the largest male condor described by Humboldt (it was killed on the eastern declivity of Chimborazo):—length, from tip of the beak to the tip of the tail, three feet three inches two lines (French); height, when perched, with the neck moderately extended, two feet eight inches; entire length of head and beak six inches eleven lines; beak alone, two inches nine lines; breadth of beak closed one inch two lines; *envergure*, or from the tip of one extended wing to the other, eight feet nine inches; breadth of leg bone, eleven lines; length of longest toe, without the claw, three inches eleven lines; claw, two inches; length of two lateral toes, with their claws, three inches seven lines; claw, 2 inches three lines; shortest toe and claw, one inch eight lines. From this measurement, it is obvious that the condor does not exceed the average size of the largest European vulture; and Humboldt states that he never saw a condor whose *envergure* measured more than nine French feet. He was also assured, by very credible inhabitants of the country, that they never saw one whose *envergure* was greater than eleven feet. He finally concludes that fourteen feet is about the maximum size to which the largest condor would attain. Two or three specimens of the condor have been exhibited in Philadelphia and New York within the last seven years, and were evidently not full grown birds; yet the *envergure* of the largest of them measured eleven English feet. The *envergure* of the specimen belonging to the Leverian museum, described by Dr Shaw, measured fourteen English feet. Notwithstanding, therefore, what is said by Humboldt, of the general correspondence in size of the Alpine lammergeyer and the condor of the Andes, we cannot avoid believing that a full grown individual of the latter species would be much more than a match, in every respect, for any European species. The condor is peculiarly tenacious of life, and has been observed, after having been hung for a considerable time by the neck, in a noose, to rise and walk away quickly when taken down for dead, and to receive several pistol bullets in its body without appearing greatly injured. The great size and strength of its plumage defends its body to a considerable degree from the effects of shot. It is easily killed when shot, or struck sufficiently hard, about the head.

CONDORCANQUI, Joseph Gabriel; an American Spaniard, who, having been ill treated by a magistrate, and sustained an act of injustice from the *audiencia* of Lima, attempted to redress his own grievances, and the oppressions of the Indians, by inciting them to insurrection against the Spanish government in 1780. He was an artful and intrepid man; and, with a view to conciliate the Indians, he assumed the name of *Tupac-Amaru*, one of the ancient incas, professing a design to restore the ancient dynasty of Manco-Capac in Peru, a project which had been entertained by Sir Walter Raleigh, in the reign of queen Elizabeth. The scheme was, at first, very successful. The spirit of revolt extended far and wide into the interior of the country; the contest lasted three years, and the pretended Tupac-Amaru was hailed inca of Peru. His conduct, however, proved obnoxious to the Spanish settlers, and the efforts of the Indians were too feeble and desultory to support so gigantic an undertaking. Troops were sent against him, and, being deserted by his followers, he was taken and put to death.

CONDORCET, Marie Jean Nicolas Caritat, marquis de; an eminent French writer, was born September 17, 1743, at Ribemont, near St Quentin,

of one of the oldest families in Dauphiny. By the assistance of his uncle Jacques Marie de Condorcet, bishop of Lisieux, he was educated in the college of Navarre, at Paris. At a public examination, which was attended by D'Alembert, Clairaut and Fontaine, the manner in which he solved a mathematical proposition gained their applause, and the youth of sixteen was so much excited by their praises, that, from that time, he resolved to devote himself entirely to the exact sciences. The duke of Rochefoucault was his patron, and introduced him into the world at the age of nineteen. But its allurements could not render him unfaithful to the severe studies which he had chosen. At the age of twenty-one, he presented to the academy of sciences an *Essai sur le Calcul Integral*, which caused Fontaine to observe, that he was jealous of the young man. His *Memoire sur le Problème des Trois Points* appeared in 1767. Both works were afterwards united under the title of *Essais d'Analyse*. The merit of this work gained for him, in 1769, the distinction of a seat in the academy of sciences. With astonishing facility and versatility, Condorcet treated the most difficult problems in mathematics; but his genius inclined him rather to lay down beautiful formulas than to pursue them to useful applications. Condorcet also wrote academical eulogies, as Fontenelle's talents in this department were very much missed. Although his *Eloges des Académiciens morts avant* 1699 (Paris, 1773) leave much to be desired, yet they were received with so much applause, that the place of secretary of the academy, in 1777, was not refused to him even by his rivals. This office imposed on him the necessity of investigating the various departments of the sciences (the most distinguished promoters of which he was obliged to eulogize), in order to be able to exhibit the latest discoveries; but he did not allow himself to be drawn away from his mathematical studies. His theory of comets gained, in 1777, the prize offered by the academy of Berlin, and he enriched the transactions of the learned societies of Petersburg, Berlin, Bologna, Turin, and Paris with profound contributions in the department of the higher mathematics. The aversion of the minister Maurepas to Condorcet delayed his entrance into the French academy till 1782. His inaugural discourse was on the advantages which society may derive from the union of the physical and moral sciences. Being intimately connected with Turgot, he was led into a thorough examination of the system of the economists, and his acquaintance with D'Alembert made him take an active part in the *Encyclopédie*, for which he wrote many articles. He was the friend of most of the contributors to this great work. In all his writings he displays an exalted view of human nature—a circumstance much to his honour, considering the character of those with whom he was associated. This feeling determined him in favour of the cause of the American colonies during their contest with Britain. He was also a friend of the enslaved negroes, and was anxious for their restoration to freedom (*Reflections sur l'Esclavage des Negres*). In 1787, Condorcet published Voltaire's Life, a sort of sequel to the complete edition of Voltaire's works, which he had given to the world with notes and illustrations, and therein expressed the admiration which the versatility of talent and the zeal in the cause of humanity of this great man had awakened in him. Meanwhile his opinions of the rights of citizens and of men, estranged him from the duke of Rochefoucault, his former benefactor. His enemies have asserted that the refusal of the post of instructor to the dauphin induced him to join the popular party. The real cause was his enthusiasm for the great and good. He wrote in favour of the popular cause, *Sur les Assemblées provinciales*, subsequently in the *Bibliothèque de l'Homme public* and the *Feuille villageoise*. Under a cold exterior, he possessed the most ardent passions. D'Alembert compared him to a volcano covered with snow. His *Feuille villageoise*, in which he simply stated the first principles of political economy, and of the relations of states, exerted considerable influence. On the intelligence of the flight of the king, he represented, in a speech which was highly admired, the royal dignity as an anti-social institution. The royal treasury, of which he was appointed, in 1791, commissary, received, at his suggestion, the name of *national treasury*. He was finally elected a deputy of Paris to the legislative assembly, and very soon, though his bodily strength seemed inadequate for the office, he was chosen secretary of the assembly. In February, 1792, he was appointed president; composed the proclamation addressed to the French and to Europe, which announced the abolition of the royal dignity; spoke in the national convention, where he had a seat as deputy of the department of Aisne, for the most part, indeed, with the Girondists; but, on the trial of Louis, he was in favour of the severest sentence not capital; at the same time, he proposed to abolish capital punishments, except in case of crimes against the state. This participation in the proceedings against the king was the reason why his name was struck off from the list of members of the academies of Petersburg and Berlin. The revolution of May 31, 1793, prevented the constitution which Condorcet had drawn up from being accepted. The constitution then adopted he attacked without moderation or reserve, and was, in consequence, denounced at the bar, July 8. He was accused, October 3, of being an accomplice of Brissot. To save his life, he concealed himself, and was declared out of the protection of the law. Madame Verney, a woman of noble feelings, secreted him for eight months. She procured him the means of subsistence, and even wrote little poems to enliven his spirits. While in this retreat, without the assistance of others, and surrounded by all the horrors of his situation, Condorcet wrote his excellent *Esquisse d'un Tableau historique des Progrès de l'Esprit humain*, full of enthusiasm for that liberty, the degeneracy of which caused him so much suffering. In answer to the encouraging words of his protectress, he wrote the *Epitre d'un Polonais exilé en Sibérie à sa Femme*, full of those noble sentiments which had been the rules of his life. He at last learned from the public papers that death was denounced against all those who concealed a proscribed individual. In spite of the prayers of the generous woman who had given him refuge, he left her, and fled in disguise from Paris. He wandered about for a long time, until, driven by hunger, he entered a small inn at Clamar, where he was arrested as a suspicious person, by a member of the revolutionary tribunal of Clamar, and thrown into prison, to undergo a more strict examination. On the following morning, March 28, 1794, he was found dead on the floor of his room, apparently having swallowed poison, which he always carried about him, and which nothing but his love for his wife and daughter had prevented him from using before. A collection of his numerous writings, complete with the exception of his mathematical works, appeared in Paris in 1804 (*Œuvres complètes, publies par Garat et Cabanis*, 21 vols.). An excellent historical notice of them is to be found in the *Notice sur la Vie et les Ouvrages de Condorcet, par Antoine Dianènyere*, 1796. The *Memoires de Condorcet sur la Revolution Française* is a poor work.

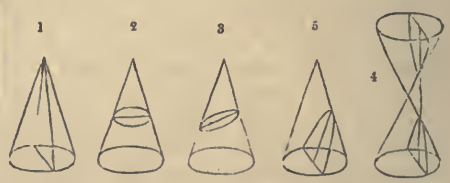
CONDOTTIERI (*leaders*); the captains of those bands of soldiers which were frequent in Italy to-

wards the end of the middle ages, who sought for service in every war, and fought not for their country, but for pay and plunder, and offered their assistance to every party which could pay them. These bands originated in the endless wars and feuds of the Italian states and governments at that time, and the whole military power soon came into their hands. They consisted principally of men too ignorant or too indolent to obtain an honest livelihood, or who wished to escape the punishment of some crime. They included, however, many people who had been deprived of their fortunes by these wars. As these men had not the slightest interest in those who hired them but that of being paid, and of finding opportunities for plunder, wars terminated with very little bloodshed, sometimes with none; for when the bands of condottieri met, the smallest in number not unfrequently surrendered to the other. The most ambitious among them, however, had higher views. Such was Francesco Sforza, who, being chosen by the Milanese to command their army, made himself, in 1451, their duke and lord, and whose posterity continued to possess sovereign power. There is little difference between most of the condittieri and some of the nobler kind of robbers. See *Captain*.

CONDUCTOR OF LIGHTNING is an instrument, by means of which either the electricity of the clouds, the cause of lightning, is conducted without explosion, into the earth, or the lightning itself is intercepted and conducted, in a particular way, into the earth or water, without injuring buildings, ships, &c. This invention belongs to doctor Franklin. While making experiments on electricity, he observed that a pointed metallic wire, if brought near an electrified body, gradually deprives the latter of its electricity in such a manner that no sparks appear. Therefore, as clouds are electrified, he thought that they might be deprived of their electricity (which is the cause of lightening and of its striking), if a pointed metallic rod were fastened upon the highest part of a building, and a wire carried down from this into the earth, so that the electricity of the cloud, attracted by the point, might be conducted into the ground. Franklin's conjecture proved to be well founded, and conductors were soon after introduced into many countries. They at first consisted of an iron rod, running down the sides of a building into the earth, while its point rose several feet above the building. Experience, thus far, shows the best construction of conductors to be this:—The conductor consists of a rod of iron, an inch thick, to the upper end of which is attached a tapering piece of copper, eight or nine inches in length, gilded, to prevent its rusting. This rod is fixed to the highest part of a building, in such a way as to rise at least five or six feet above it: to this are fastened strips of copper, three or four inches broad, and rivetted together, which must reach to the earth, and be carried into it about a foot deep. The strips are to be carefully nailed upon the roof and against the wall of the building. The first conductors in Europe were erected at Payneshill, in England, by doctor Watson, in 1762, and upon the steeple of St James' church, at Hamburg, in Germany, in 1769. In modern times, conductors have been proposed to supersede those formerly in use. Among them is the cheap one of Nicolai, made of strips of tin, which has already been used; for instance, at Lohmen, near Pirna.

CONDUIT (*French*), in architecture; a long narrow passage between two walls, or under ground, for secret communication between various apartments, of which many are to be found in old buildings; also a canal of pipes, for the conveyance of water; a sort of subterraneous or concealed aqueduct. The construction of conduits requires science and care. The ancient Romans excelled in them, and formed the lower parts, whereon the water ran, with cement of such an excellent quality, that it has become as hard as the stone itself, which it was employed to join. There are conduits of Roman aqueducts still remaining, of from five to six feet in height, and three feet in width. Conduits in modern times, are generally pipes of wood, lead, iron, or pottery, for conveying the water from the main spring or reservoirs to the different houses and places where it is required.

CONE, in geometry; a solid figure having a circle for its base, and its top terminated in a point, or *vertex*. This definition, which is commonly given, is not, in mathematical strictness, correct; because no circle, however small, can become a mathematical point. But these deficiencies of mathematical strictness connected with constructive geometry, which is based on figures and diagrams, are avoided by analytical geometry, which operates without figures.



The figure might be called the *round pyramid*, according to the definition of a pyramid. Cones are either *perpendicular*, if the axis, that is, the line from the vertex to the centre of the base, stands perpendicularly on the base; or *oblique*, or *scalenous*, if the axis does not form a right angle with the base. (1) if a cone be cut perpendicularly to the base, the section is a triangle; (2) if a cone is cut parallel with its base, the section is a *circle*; (3) if the section is made obliquely, that is, nearer to the base at one end than at the other, a curve is obtained, which is called an *ellipse;* (4) if the section be made parallel with the axis, perpendicularly from the vertex, or so as to make a greater angle with the base than is made by the side of the cone, the curve obtained is called a *hyperbola;* (5) if the section be made parallel with one side of the cone, in such case the curve is called a *parabola*. These three lines, figures, and planes are called *conic sections*, and form one of the most important parts of mathematics, which is distinguished for elegance, demonstrating, with surprising simplicity and beauty, and in the most harmonious connexion, the different laws, according to which the Creator has made worlds to revolve, and the light to be received and reflected, as well as the ball thrown into the air by the playful boy, to describe its line, until it falls again to the earth. Few branches of mathematics delight a youthful mind so much as conic sections; and the emotion which the pupil manifests, when they unfold to him the great laws of the universe, might be called natural piety. Considering conic sections as opening the mind to the true grandeur and beauty of the mathematical world, whilst all the preceding study only teaches the alphabet of the science, we are of opinion that the study of them might be advantageously extended beyond the walls of colleges, into the higher seminaries for the education of females. The Greeks investigated the properties of the conic sections with admirable acuteness. A work on them is still extant, written by Apollonius of Perge. The English have done a great deal towards perfecting the theory of them. In teaching conic sections to young people, the descriptive method (resting on diagrams) ought always to be connected with the analytic method.

CONFEDERATION, GERMAN. See *Germany*.

CONFEDERATION OF THE PRINCES (of Germany; in German, *Furstenbund*). The occasion of the confederation of the German princes was the extinction of the male line of the family of the elector of Bavaria, by the death of the elector Maximilian Joseph, Dec. 30, 1777. After his death his territories fell to the nearest collateral relation, Charles Theodore, elector of the Palatinate. This prince being without children, had yielded to the propositions of the house of Austria, and obliged himself, by the convention of Vienna, Jan. 3, 1778, to renounce all claim to the inheritance. This convention was opposed by the presumptive heir of the Palatinate, the duke of Deux-Ponts, and also by the elector of Saxony, nephew to the deceased elector of Bavaria. Both princes sought the intercession of Frederic the Great of Prussia, who, after fruitless negotiations on the subject with Austria, took up arms. At the peace of Teschen, May 13, 1779, which ended this short war for the Bavarian succession, the convention of Vienna was annulled. Austria obtained of Bavaria merely the Innviertel, with Braunau, and Charles Theodore received possession of the rest of the territories. France and Russia, the allies of Prussia, guaranteed the peace. Some years after, the emperor Joseph II. again thought of enlarging and strengthening the Austrian monarchy by the addition of the state of Bavaria, and the empress of Russia proposed an exchange of the Austrian Netherlands for Bavaria. The elector Charles Theodore was to have the Austrian Netherlands, with the exception of Luxemburg and Namur, with the title of *king of Burgundy*. The elector was induced to agree to this by the Austrian ambassador, Von Lehrbach; the duke of Deux-Ponts, the presumptive heir, by count Romanzoff, the Russian ambassador; and both were promised, in addition to what they received by exchange, the sum of 3000 florins from the Austrian coffers. At the same time, the duke was told that the consent of the elector had been secured, and that the exchange would take place, even without his concurrence. But the duke afterwards refused his consent to the exchange of the land of his forefathers, and again had recourse to Frederic. This monarch supported with zeal the remonstrance sent by the duke to the empress Catharine of Russia, and received a communication from the empress, that she thought the exchange advantageous to both parties, but that it ought not to take place without their mutual consent. Although Louis XVI., who had guaranteed the peace of Teschen, and would not consent to the exchange, now caused the king of Prussia to be assured that Joseph II., his ally, had given up the plan, on account of the opposition of the duke of Deux-Ponts, the court of Vienna still refused to make satisfactory arrangements. Frederic II. therefore, in March, 1785, induced the electors of Saxony and Hanover to form a league, and, in spite of the opposition of Austria, the terms of union were signed in Berlin, July 23, 1785, by Brandenburg, Saxony, and Hanover, for the support and defence of the German constitution, agreeably to the terms of the peace of Westphalia and the treaties which followed, of the electoral capitulations, and of the other laws of the empire. The measures to be taken against the exchange of Bavaria were provided for by a secret article. In a few months, this league was joined by the elector of Mentz and his coadjutor, Dalberg the elector of Treves, the landgrave of Hesse-Cassel, the margraves of Anspach and Baden, and the dukes of Deux-Ponts, of Brunswick, of Mecklenburg, of Weimar and Gotha, with the prince of Anhalt-Dessau. The views of Austria were frustrated by this open act of the king of Prussia, and both Austria and Russia entirely relinquished their project. (See Von Dohm, *Ueber den Deutschen Furstenbund*—on the Confederation of the German Princes, Berlin, 1785; John Muller's Description of the Confederation of the German Princes; and Reuss's *Deutsche Staatskanzlei*, vol. 13). This confederation is to be considered as one of the many proofs of the utter insufficiency of the German empire for the purposes of a general government.

CONFEDERATION OF THE RHINE. In the war of 1805, which turned out so unfortunately for Austria, several of the princes of the south of Germany were obliged to ally themselves to France, or did it voluntarily. The peace of Presburg (Dec. 26, 1805) gave the first impulse to the entire dissolution of the German empire, by conferring crowns on the electors of Bavaria and Wurtemberg, and on both, as well as on Baden, complete sovereignty, such as had been already exercised by the other great German states. Soon after (May 28, 1806), the first German elector, arch-chancellor of the empire, announced to the diet that he had appointed cardinal Fesch, uncle of Napoleon, his coadjutor and successor,—an act inconsistent with the constitution of the empire. Ultimately, sixteen German princes made a formal declaration of their separation from the emperor and the empire, in the act of confederation signed at Paris, July 12, 1806, by the kings of Bavaria and Wurtemberg, the elector arch-chancellor of the empire, the elector of Baden, the new duke of Cleves and Berg (Joachim Murat), the landgrave of Hesse-Darmstadt, the princes of Nassau-Usingen and Nassau-Weilburg, Hohenzollern-Hechingen, and Hohenzollern-Sigmaringen, of Salm-Salm, and Salm-Kyrburg, the duke of Ahremberg, the princes of Iseuburg-Birstein and of Liechtenstein, and the count Von der Leyen. This was communicated to the diet Aug. 1, 1806. They assigned, as the reason for this separation, the deficiencies of the constitution of the German empire, and invited the other members of the empire to join their confederation. The French ambassador, Bacher, announced, on the same day, that his sovereign would no longer acknowledge a German empire. (See *Germany*.) The emperor Francis II. resigned his dignity as head of the German empire, Aug. 6, being induced to take this step, according to his declaration, by the demands contained in several articles of the peace of Presburg, and the new confederation of the German states, which he considered inconsistent with his rank as head of the empire. After the signing of the act of confederation, to which the name of the prince of Liechtenstein was attached without his knowledge, the elector or arch-chancellor received the title of *prince primate;* the elector of Baden, the landgrave of Hesse-Darmstadt, and the duke of Berg, received each the title of *grand-duke*, with royal privileges and rights; Nassau-Usingen was raised to a duchy, and Von der Leyen to a principality. The emperor of France adopted the title of *protector of the confederation of the Rhine*. By the establishment of this confederation, the following states lost their political independence:—the imperial free city of Nuremberg, which was ceded to Bavaria; Frankfort, to the prince-primate; the principality of Heitersheim, belonging to the order of the knights of St John, which became subject to Baden; and the burggravate of Friedberg, to Hesse-Darmstadt. Furthermore, by *mediatisation*, the princes of Nassau and Orange-Fulda, of Hohenlohe, Schwarzenberg, and many others; the landgrave of Hesse-Homberg, the dukes of Corswarem-Looz and of Croy, many counts of the empire, and all the former knights of the empire, were subjected to the princes of the confederation of the Rhine. These mediatised members of the empire only kept possession of their patrimonial

estates and private property, the jurisdiction in the first and second instances, the feudal rights, and mining privileges, &c.; but the power of legislation, essential to sovereignty, the supreme jurisdiction, the right of declaring war and peace, of forming alliances, of regulating the police, and taxation, &c., devolved on the princes of the confederation, to whom these mediatised princes became subject. The object of this confederation was to secure external and internal peace. France and the members of the confederation were to be closely allied, and, if one of them was threatened with war, or attacked, all the other confederates were to take up arms at the call of the protector, without further consultation, to assist the party threatened or attacked. Although, by the act of confederation Napoleon was called *protector of the confederation of the Rhine*, he was not recognised as a chief to whom the rulers of the several states were to be subject. To deliberate on the mutual affairs of the confederates, a confederate diet was to be established at Frankfort on the Maine, with two divisions—the royal, in which the grand-dukes were likewise to have seats, and that of the princes. The prince-primate was to be general president of the diet, and particularly of the royal chamber; in that of the princes, the duke of Nassau was to preside. At the death of every prince-primate, his successor was to be appointed by the protector of the confederation of the Rhine. No member of the latter was to be allowed to enter the service of any state not included in the confederacy, or allied with the same, nor was any member to be allowed to cede his sovereignty in favour of any but a confederate. The disputes of the confederate princes were to be decided at the diets, and, for the sake of adjusting complaints against the members of the confederacy, two courts of justice were to be established. But neither these, nor the meeting of the confederacy, ever took place. Finally, Catholics and Protestants were to enjoy equal rights in all the confederated states. Thus, in the place of the German empire, which had existed nearly 1000 years, at least in name, a confederation was formed, which, transitory as it may seem in many respects, nevertheless brought about a total and lasting revolution in the political relations of the former German states of the empire and their subjects, and is erroneously judged, if it is considered as merely the offspring of foreign ambition, and not as the inevitable consequence of the internal dissolution of the ancient constitution of the empire. Sept. 25, 1806, the elector of Wurtzburg joined the confederacy as a grand-duke. Prussia, on the other hand, to limit the increase of the power of France, by the further extension of this confederacy, had formed the project of a similar union, under her protection, to be composed of the northern German princes. But an end was put to this project by the war of 1806—7; and, during this war, the elector of Saxony, after having separated from Prussia, and assumed the title of *king*, at the peace concluded between Saxony and France, at Posen (Dec. 11, 1806) entered the confederacy. His example was followed (Dec. 15, 1806) by the five Saxon dukes; and, by the treaty signed at Warsaw, April 13, 1807, the two princes of Schwarzburg, the three dukes of the house of Anhalt, and many other smaller princes, were admitted into the confederacy. The kingdom of Westphalia, formed out of the provinces conquered from Prussia and other states, and assigned to Jerome Bonaparte, was likewise added to the confederation of the Rhine, by the constitution, confirmed by the emperor of France, Nov. 15, 1807. Finally the duke of Mecklenburg-Strelitz (Feb. 18, 1808), the duke of Mecklenburg-Schwerin (March 22, 1808), the duke of Oldenburg and prince of Lubeck (Oct. 14, 1808), were admitted as members; so that the confederacy extended over a space of 125,160 square miles, with 14,608,877 inhabitants; and the confederate forces were increased from the originally stipulated number of 63,000 to 119,180. But the protector of the confederacy of the Rhine, who had established the league, for the maintenance of internal and external peace, thought himself authorized to make inroads on the security and independence of his confederates, and, by a decree of Dec. 10, 1810, by which the rivers Scheldt, Meuse, Rhine, Ems, Weser, and Elbe were added to France, deprived the following princes of the confederacy of their political existence, and of the independence secured to them by the act of confederacy:—1. the duke of Oldenburg, on whose dukedom he seized, leaving him only the principality of Lubeck; 2. the duke of Ahremberg, of whose possessions a part were added to France, and the remainder to the grand-duchy of Berg; 3. the possessions of the prince of Salm-Salm and Salm-Kyrburg were likewise added to France. Of the grand-duchy of Berg, and the kingdom of Westphalia, considerable portions were likewise joined to France. The territories thus appropriated amounted to 11,278 square miles, with 1,133,057 inhabitants; so that 114,140 square miles, and 13,475,826 inhabitants, remained to the confederacy. The year 1813 put an end to its existence. The present grand-dukes of Mecklenburg-Schwerin and Mecklenburg-Strelitz, the last, who, compelled by their situation, had joined the confederacy of the Rhine, were the first that renounced it, immediately on the alliance of Prussia with Russia against Napoleon. They were soon followed by the kings of Bavaria and Wurtemberg, besides several less powerful princes. Others hesitated longer, prevented partly by the situation of their countries, partly by other considerations, from making a free declaration. Among these were the king of Saxony, as also the grand-duke of Frankfort, the president of the confederacy. The former lost half of his country, the latter all. The king of Westphalia and the grand-duke of Berg (son of the ex-king of Holland) shared the same fate. For the same reason, by the resolutions arbitrarily passed at the congress of Vienna, the dominions of the prince of Isenburg and of the prince Von der Leyen, who, as princes of the confederacy of the Rhine, were sovereigns, were mediatised. The other members of the confederacy of the Rhine, with the exception of the duke of Ahremburg and the prince of Salm, have joined the German confederacy as sovereigns.

CONFESSION. This term is sometimes applied to a profession of faith; for instance, the confession of Augsburg. See *Augsburg*, and *Reformation*. It sometimes also signifies a religious sect; as the three Christian confessions—the Roman Catholic, the Lutheran and the Calvinistic. *Confiteor* (I acknowledge) is the confession which the Catholic priests make before the altar, when beginning mass or public worship.

Confession, in law, is when a prisoner, after being arraigned, and hearing the indictment against him read, confesses the offence of which he is charged. Such confession is the most satisfactory ground of conviction.—In the German states, the confession of the prisoner, to be conclusive, must not only be made in open court, but must be accompanied by a disclosure, on his part, of the circumstances under which the crime was committed.—By the revised laws of New York, a prisoner, instead of being asked whether he is guilty or not guilty, is asked whether he will be tried by the jury.

Confession. Auricular, in the Romish church; the disclosure of sins to the priest at the confessional,

with a view to obtain absolution for them. The father confessor inquires of the person confessing concerning the circumstances of the sins confessed, and proportions his admonition, and the severity of the penance which he enjoins, to the degree of the transgression. The person confessing is allowed to conceal no sin of consequence which he remembers to have committed, and the father confessor is bound to perpetual secrecy. The absolution granted thereupon has, according to the doctrines of the Catholic and Greek churches, sacramental efficacy. But the holy scripture does not contain an express decision on this point, and the custom of confession before taking the Lord's supper was not established in the oldest Christian congregations. Whoever was guilty of great sins, made a public acknowledgment of them, and a profession of repentance before the assembled congregation. This was usually committed to writing, and read by the penitents. Pope Leo the Great, in 450, altered this public confession into a secret one before the priest. The fourth Lateran council (can. 21) ordains, "that every one of the faithful, of both sexes, on coming to years of discretion, shall, in private, faithfully confess all their sins, at least once a-year, to their own pastor, and fulfill, to the best of their power, the penance enjoined them, receiving reverently, at least at Easter, the sacrament of the eucharist, unless, by the advice of their pastor, for some reasonable cause, they judge it proper to abstain from it for a time, otherwise, they are to be excluded from the church while living, and, when they die, to be deprived of Christian burial." While the Catholic church thus requires from the penitent the avowal of his single crimes, the Lutheran church requires only a general acknowledgment, leaving it, however, at the option of its members, to reveal their particular sins to the confessor, and to relieve the guilty conscience by such an avowal; for which reason, the Protestant priests are bound, as well as the Catholic, to keep under the seal of secrecy whatever has been intrusted to them in the confessional. The confession, in the Lutheran church, is sometimes special, when the penitents separately acknowledge their sins; sometimes general, when it is done by many, who are assembled for the purpose, and confess according to a certain formula. Where the priest is well acquainted with the different members of his congregation, the special confession seems to be most suitable, because it gives the confessor an opportunity of adapting his reproofs, exhortations, and consolations to the wants of each individual, and thus of producing a stronger impression. The opportunity which the confession gives the priest of directing self-examination, of rousing, warning, exhorting, and consoling the penitent, becomes a means of adding to the effect of the public religious services. But, at the same time, it affords a dangerous opportunity to the priest of abusing the confidence reposed in him, of which the history both of nations and individuals exhibits fearful examples. The practice of confession is grounded on the imperfection of human virtue. The Lutherans, therefore, retained this custom, although they knew that it was not ordained by Christ, but was only a part of the ancient church discipline: they did not, however, maintain its absolute necessity. (See *Penitence*.) The title of *confessors* was anciently given to those who had endured torments in defence of the Christian religion. It was often used for *martyrs*, but was subsequently confined to those who, having been tortured, were set free. Saints are also called *confessors*. So are the priests, in the Roman Catholic church, who absolve sinners. For an account of the intrigues of confessors in political affairs, see Grégorie, *Histoire des Confesseurs des Empereurs, des Rois*, &c.; Paris, 1824.)

CONFESSION OF AUGSBURG. See *Augsburg Confession*.

CONFESSIONAL (from *confessionis*, Lat.), in architecture; a cell in a Catholic church, wherein the confessor sits to hear confessions. The confessional, of which there are many in every Roman Catholic church and chapel, is a species of cell, built of joinery, with a boarded back next the wall, or against a pillar or a pier, divided into three niches or small cells. The centre, which is for the reception of the priest, is closed half way up by a dwarf-door, and has a seat within it. There is a small grated aperture in each of the partitions between him and the side-cells, which are for those who come to confess, and have no doors. The sight of the numerous confessionals in St Peter's church at Rome each with an inscription, setting forth in what language penitents can confess within, is very impressive.

CONFIRMATION; a ceremony intended for the completion of baptism, and considered by some churches as a sacrament. The council of Trent settled several points concerning it (sess. vii. *De Sacram*). It is administered by bishops. The ceremony consists in the imposition of hands on the head of the person to be confirmed, accompanied with the holy unction. No other priest can confirm. The meaning of this sacrament may be best learned from the Acts of the Apostles, (viii. 14—21; xix. 1—6). Paul (in Heb. vi. 1—5) speaks of the imposition of hands as a custom to be perpetually observed among Christians. Confirmation, however, is considered by the Catholics a useful but not a necessary sacrament. Baptism can be administered even by a heretic, but not confirmation. In the Greek church, and other Oriental sects, the sacrament of confirmation follows immediately after baptism, and is administered as in the Romish church. The Protestant Episcopal church, the Lutherans and Calvinists of Europe, have retained the practice of confirmation. It is, with individuals of these sects, an assumption of the obligations which others undertook for them at their baptism. In Germany, confirmation among Protestants is one of the most solemn acts, and takes place only after a certain course of instruction in the Christian faith. The Lord's supper is not taken by these three sects, until after confirmation.

CONFUCIUS (also KON-FU-TSE, and KUNG-FU-DSU), a teacher of religion and morals, who, like Moses and Zoroaster, exercised an extensive influence on his own and succeeding times, and now, after thousands of years, is still venerated by his countrymen, and respected by other nations, lived about 550 years B. C. He was of royal descent, and held the rank of a mandarin at court, in his native land, in the kingdom of Lu (at present *Shang-Tong*, a province of the Chinese empire, which was not till a later period formed into a single monarchy); but, as the king would not follow his advice, he resigned his dignity, went to the kingdom of Siam, and became a teacher of morals. He led a quiet and temperate life, and was distinguished for his wisdom. He neither attempted to overthrow existing establishments, nor to gain dominion by deceit over the minds of men; but only to disseminate precepts of virtue and wisdom. He taught in the cities and at royal courts. Many hearers assembled about him, and he became the founder of a numerous sect, which still exists in China, and has extended to Cochin-China. His religious opinions are very uncertain: it does not appear that he changed or purified the prevailing faith. It may be inferred, however, with great probability, that he taught the immortality of the soul,

and favoured and propagated the existing belief in fate and soothsaying, and in the worship of certain good spirits who watch over the elements and the various parts of the earth. It is certain that he inculcated it as a duty on his disciples to revere their ancestors. We are better acquainted with that part of his doctrines which relates to common life, and contains general precepts of practical utility. In the most impressive manner, he enjoined universal benevolence, justice, virtue, and honesty, and the observance of all usages and customs which had been once introduced; it being proper that they who live together should live in the same manner, and sympathize in each other's pains and pleasures. Sometimes he inculcates reverence of old age; sometimes he shows how the tendencies of children should be guided, and their rising passions corrected. Sometimes he speaks of the peaceful virtues of domestic life, and sometimes he exhorts monarchs to exercise justice and humanity. He praises the delights of friendship, and teaches the forgiveness of offences. As a lawgiver, he deserves less honour. It cannot be denied that he extended the limits of paternal authority too far; for he allowed parents even the right to sell their children. It was a sophism unworthy of his wisdom, to say, as children can sell themselves, no one should hesitate to give this right to the authors of their existence. Confucius erred especially in viewing legislation as nothing but a branch of morals, and was satisfied, therefore, with giving general precepts on this subject. Moreover, esteem for the early lawgivers of his people hindered him from making careful investigations for himself: he acquiesced rather in the decisions of those celebrated men of whom he called himself the disciple. His conduct is worthy of praise, inasmuch as he encouraged marriage, and recommended agriculture: trade he did not positively denounce, but he was less favourable to it. Of the works ascribed to him, the *Shu-King*, or *Shan-Shu*, is the most important; but it is doubtful whether all parts of it were written by him. In comparing Confucius, Mohammed, and Zoroaster, Mohammed bears away the palm as the founder of a religion, Zoroaster as a lawgiver, and Confucius as a moralist. (See the *Works of Confucius*, original text, with an English translation, by J. Marshman, Serampore, 1809, 4to). The first volume contains the Life of Confucius. Doctor Wilh. Schott has likewise translated the Works of the Chinese Sage and his Disciples, for the first time, from the original into German, with notes (1st vol. Halle, 1826). Of the successors of Confucius, Meng-Tseu (Mencius) is to be chiefly noticed, who lived about ten years after Socrates, and died B. C. 314, aged eighty-four. He arranged the books of the *She-King* and *Shu-King*, and wrote a collection of conversations on moral philosophy. He resembled Socrates, in founding and building up a pure system of moral philosophy. In 1824, Stanislaus Julien published in Paris, in the Latin language, the system of Meng-Tseu, with a commentary, translated from the Chinese.

CONGESTION (from the Latin *congestio*, the act of heaping; carrying together). The different parts of the human body do not always receive the same quantity of blood, but sometimes more, sometimes less. Thus, for instance, during digestion, it flows towards the stomach and the liver; during violent or long-continued speaking, singing, or running, it collects in the lungs and the heart; during close thinking, in the brain. In general, the blood flows in greater quantities into any part in proportion to the action of that part; but, in a state of health, it flows off with as much rapidity as it collects. Sometimes, however, too much blood accumulates in an organ and remains too long in it; and this injures the structure and the function of such an organ. This accumulation of blood arises from a diseased state of the system, and is called *congestion*. Congestion may be caused by whatever, in general, accelerates the circulation of the blood, and causes it to tend to a particular part; thus, for instance, among the causes of congestion are the different periods of development of the human body, each of which renders some particular organ unusually active; the crisis of disease; and, lastly, the accidental exertions of certain organs. Under such circumstances, congestion is caused by an excited state of the arteries in general, and of some particular ones especially. Secondly, if the current of blood to one organ is checked, it accumulates in another. Hence colds caught through exposure of the feet, also the suppression of the secretions, &c., so often cause congestion. Thirdly, the vessels which bring back the blood—the veins—are sometimes in a condition unfit to answer their destination; as, for instance, if they are already too full, if their power to receive the blood and to propel it is lost or diminished, or if they are prevented from performing their function by external pressure, or by tumours. Hence congestions are divided into active and passive; those of the arteries, and those of the veins. Where the blood accumulates, the part becomes red and hot, the pulse beats more violently, and the veins expand; the part swells, and a feeling of sickness, pain, pressure, &c., comes on. The functions of the part change; if the congestion is slight, they become more active. In higher degrees of congestion, and if it is continued for a long time, the functions are checked, weakened, and sometimes entirely destroyed. Now, as every organ has its peculiar function, it follows, that the symptoms of congestion, resting on these grounds, must be very different, according to the different organs in which it takes place. During the congestion of blood in one organ, the other organs exhibit symptoms of want of blood, viz., coldness, paleness, diminution of size, and weakness. Congestion generally lasts but a short time; but if not early cured, and its return, which would otherwise be frequent, prevented, it is only the beginning of other diseases. Sometimes it terminates in bleeding, which is a remedy for it; sometimes it increases into inflammation; sometimes it becomes a chronic disease; that is, the blood accumulates for a long time, and expands the veins; the expansion becomes permanent, and the original excitement is succeeded by a state of torpidity and weakness, which is called *stagnatio*, or *infarctus*.

CONGLOMERATE. See *Sandstone*.

CONGO; a kingdom in Lower Guinea, under the sovereignty of the Portuguese; between lat. 2° 40′ and 8° 25′ S., and between lon. 12° 30′ and 19° 30 E., bounded on the N. by Anziko, W. by the Atlantic, S. by Angola, and E. by a country very little known, and inhabited by savages. The river Zaire (q. v.) forms the boundary of Congo in some parts and empties into the Atlantic. From the mountains east of Congo a large number of rivers descend, which do not dry up in the hot season. In those mountains (lat. 7° 30′ S.) lies the lake Achelunda. The coast is unhealthy, on account of its low grounds and forests; the interior, however, has a temperate climate, and according to the missionaries, is populous, well cultivated, and considered by the inhabitants as a terrestrial paradise. There are two seasons, the dry and the rainy; the latter, beginning in October and ending in April, is accompanied by rains, thunder, and tempests. All travellers agree in describing the soil as covered with an exuberant vegetation. Several kinds of grain, unknown to Europe, are cultivated near the rivers; among them is the

lucc or *luno*, which furnishes a fine white bread. The soil produces three crops of maize annually. Among the trees, the *baobab* is mentioned: it is of enormous size, and its fruit is eaten by the natives. The soil produces an immense variety of plants. Iron and copper, porphyry, jasper, marble, salt, crystal, gold, and silver are found in the mountains. Congo, like the rest of Guinea, abounds in wild animals: the elephant, leopard, lion, boar, porcupine, jackal, zebra, different kinds of antelopes, and a great variety of apes; are the principal. The rivers contain crocodiles, hippopotami, and turtles. The coast swarms with fish. The reptiles are numerous, and many of them venomous; among them are the gigantic boa, the chameleon, and the flying lizard or palm rat, which is worshipped by the natives. Ostriches, peacocks, parrots, &c., inhabit the deserts and forests. A great number of noxious insects live likewise in this rich country, e. g., mosquitoes, the banzo (of which the sting is said to be mortal), formidable ants, the insondi (which enter the trunks of elephants, and cause them to die with madness), &c. Bees are numerous. Almost all domestic animals, introduced by the Portuguese, thrive pretty well. Though this country abounds in all the productions of the tropics, there appears to be no commerce carried on, except that in slaves, of whom, vast numbers are annually carried to Brazil. The population is uncertain, because the missionaries seem to have exaggerated it, and other travellers have only visited a small part of the country. The natives of Congo are of a middle size; their colour and features are less strongly marked than those of the other Negroes. They kill a number of slaves over the grave of their sovereign, who are intended to serve him in heaven, and to give testimony of his life. They seem less intelligent than the other Negro tribes. This circumstance, together with their great indolence, is a great obstacle to their civilization. Polygamy exists among them, and, though adultery is rigorously punished, they will often sell their wives for a glass of brandy to a European. They worship fetiches, with which they cover themselves, and adore images, in which a similarity with the Egyptian physiognomy is said to have been discovered. Murder is punished by death; almost all other crimes by slavery. The kingdom is divided into several provinces, of which there seem to be six principal ones—Bamba, Batta, Pango, S. Salvador, Sandi, and Sonho. Chiefs, who have the titles of *dukes, counts,* and *marquises*, rule under the Portuguese. In each province is a capital or *banzo*. Banza Congo, which, by the Portuguese, is called S. Salvador, is the capital of the whole kingdom. Congo was discovered by the Portuguese, in 1487, under the command of Diego Cam, who ascended the river Zaire. Soon after, the Portuguese sent troops there, and obtained possession of the country, partly by force, and partly by cunning. Their missionaries met with much success, and there are still many Catholics in the country, but many have returned to idolatry, which is more conformable to their savage state. The government is despotic. This kingdom has been important to the Portuguese, on account of the slaves which it afforded. Among slave-dealers, the Congo men are generally not considered so strong and powerful as slaves from some other parts of Africa.

CONGO-BATTA; a city of Congo, thirty leagues N. E. of S. Salvador. It is celebrated for its slave-market.

CONGREGATIONS, in the papal government; meetings or committees, consisting of cardinals, and officers of the pope, to administer the various departments, secular and spiritual, of the papal dominion. To these belong the inquisition (congregation of the holy office), the congregation for the explanation and execution of the decrees of the council of Trent (*de concilio*), the congregation *de propaganda fide*. (See *Propaganda*.) Thus there is also a military congregation, the president of which is likewise a prelate.

Congregation also signifies a society of several convents of the same rule, which, together, form an organized corporation, hold chapters, and elect superiors. The province of an ecclesiastical order is also called a *congregation*.

Congregation is likewise used to signify an assembly met for the worship of God, and for religious instruction.

CONGREGATIONAL CHURCHES; such as maintain the independence of each congregation or society of Christians, as to the right of electing a pastor, and of governing the church.

CONGREGATIONALIST; a member of a Congregational church.

CONGRESS, in international politics; a meeting of the rulers or representatives of several states, with a view of adjusting disputes between different governments. The history of Europe may, in a certain respect, be divided into three periods. In the first, it was split up into a great number of small divisions, which were in a state of perpetual contest. In the second, these were consolidated into larger masses, which continued the former conflicts on a larger scale. The third period is the present, in which nations have begun to understand their interest more clearly, and to hold the difference of language and the natural divisions of mountains and rivers as trifles, in comparison with the great interests of liberty and humanity. Europe is now divided into two great parties, who carry on a war of principles: the one may be called the party of legitimacy, feudalism, despotism &c.; the other that of liberty and equal laws. Thus the opposing masses in Europe have become continually fewer and more comprehensive, and the nature of the contest more intellectual. Mr Canning's remarks on this point, in his speech on the occasion of sending troops to Lisbon to assist the liberal party, do him honour. Congresses began on the second period, and they bear the character of the times in which they have been held. Of late years, they have become much increased in dignity and importance, having been employed, since the commencement of the third period, which we may date from the congress at Vienna or the congress at Aix-la-Chapelle, to adjust political interests on a much larger scale than they were adjusted originally. *See the last paragraph of this article.*

A congress is a simple means of determining, in a diplomatic way, the conflicting claims of belligerent powers, or of states whose interests interfere with each other, and thus of preparing or concluding peace, or preventing a rupture, and of mediating between the different interests of different nations. At the same time, it is very common for a congress to assume illegal power in respect to particular governments or nations, because a congress affords governments of the same way of thinking so much opportunity of concentrating their forces. The plenipotentiaries of the dissentient, or of the mediating powers, assemble at an appointed place, commonly on neutral ground, and, partly by notes, partly by verbal communication, carry on their negotiations. It is necessary to distinguish the preliminiary congress, in which the preliminaries are settled (such as the consent and the representation of the different powers, the place and time of the meeting, the extent of the neutral ground, the security of ambassadors and public messengers, the ceremonial, and the method of transacting business), from the principal congress, which is to bring

the affair in question to a decision. These preliminaries are commonly settled in the diplomatic way, by the mediating powers, and then the principal congress assembles. The plenipotentiaries, when they meet, after mutual greetings, appoint, in a preliminary conference, the day on which the congress is to be opened, and determine the manner in which business is to be transacted, the forms of negotiation, the order of precedence among the different powers (in Europe, the alphabetical order has been followed since 1815; see *Ceremonial*), and the time of session. The congress opens by the exchange and perusal of credentials among the plenipotentiaries, which, in case the negotiating parties have referred to the arbitration of a mediator, are given to him. The envoys of the contending powers then carry on their negotiations directly with each other, or by the intervention of a mediator, either in a common hall, or in their own residences by turns, or, if there is a mediator, in his residence. These negotiations are continued either by writing or by verbal communication, until the commissioners can agree upon a treaty, or until one of the powers dissolves the congress by recalling its minister.

The history of the congresses is a history of European politics. It appears that Henry IV. and Sully, having conceived the project of forming a union of the European states, the members of which, being equal in power, were to decide their quarrels by appeal to a senate, first thought this manner of negotiating advisable. Before the thirty years' war, no formal congresses had been held in Europe. Those at Roschild in 1568, at Stettin in 1570, and that convoked at the request of the czar John IV., by the pope, at Kiwerova-Horka, in 1581, and succeeding years; that at Stolbova in 1617, at Viasma in 1634, at Stumdorf in 1635, and at Bromsebro in 1645, which were terminated by the treaties of peace, named from the places at which they were held, regarded merely the political relations of the northern states. The history of the European congresses for peace begins, therefore, with those at Munster and Osnabruck. The history of congresses may be conveniently divided into three periods: 1. from the foundation of the new European system by the double congress, which was followed by the peace of Westphalia, until the peace of Utrecht (from 1648 to 1713); 2. from the establishment of the influence of the naval and colonial power of the British by the peace of Utrecht, to the congress of Vienna (from 1713 to 1815); 3. from the (so called) restoration of the *balance of power* in Europe, and the establishing of the principles of legitimacy, and stability of the existing governments, by the congress of Vienna and the holy alliance, to the present day. In every congress since 1648, some of the most powerful governments have taken the lead of the rest, and have determined, in a certain measure, the course of negotiation, by laying down general principles. Bignon has weighed against each other the interests of the people and of the cabinets, in his work *Les Cabinets et les Peuples depuis* 1815, *jusqu'a la Fin de* 1822. We will now speak of the more important congresses, according to the order of the three epochs which we have laid down.

A. From 1648 to 1713. 1. The congress at Munster and Osnabruck. It is remarkable that the pope (during the thirty years' war the only sovereign, among the princes of Europe, except the king of Spain, who refused to acknowledge the peace of Westphalia) made the first propositions of peace, in 1636, at Cologne, by his nuncio Ginetti. The emperor and Spain did indeed send ambassadors to Cologne, who were prepared to negotiate with France and Sweden, under the mediation of the pope; but, on account of this very mediation, France refused to send commissioners to this congress, but, on the contrary, joined with Sweden in a common negotiation for peace, at Hamburg. The emperor, finally, in a preliminary treaty at Hamburg, in 1641, resolved to negotiate with both powers at Munster and Osnabruck. On account of the dispute between France and Sweden on the subject of rank, and to avoid collision between the Protestant envoys and the nuncio, those two cities were chosen, which France had offered, being only six leagues distant from each other, and it was decided that the two meetings should form but one congress. This great European council of peace was first opened in December, 1644. At Munster, everything was carried on by the mediators, the nuncio of the pope, and the envoy of the republic of Venice: at Osnabruck, the negotiations were direct, and the Latin language was used. (See *Westphalia, Peace of.*) 2. The congress of the Pyrenees. France and Spain continued, until 1659, the war which the peace of Westphalia had ended in Germany. After a preliminary treaty concluded at Paris, May 7, the isle of Pheasants, in the Bidassoa, on the frontiers of the two states, was chosen for a place of meeting; and cardinal Mazarin and the Spanish minister, don Luis de Haro, from Aug. 13 to Nov. 25, 1659, had twenty-five conferences under a tent, in which the former used the Italian and the latter the Spanish language. The peace of the Pyrenees, concluded Nov. 7, secured to France her political superiority: Spain ratified the peace of Munster, and yielded Roussillon, Conflans, and some places in the Netherlands, to France, which restored the banished prince of Condé to his honours and estates. Lorraine was also restored to her duke. 3. The congress at Breda, by the mediation of Sweden, ended the war between Great Britain on the one side, and the Netherlands, France, and Denmark on the other, by the peace of Breda, July 31, 1667, which principally related to their colonies in the West Indies, and the toll upon the Sound. 4. The congress at Aix-la-Chapelle, under the mediation of the pope, ended the war between France and Spain (occasioned by the claim of Lous XIV. to a part of the Spanish Netherlands), by the peace of Aix-la-Chapelle, May 2, 1668, according to the terms of which France retained the places which it had conquered in the Spanish Netherlands, but restored Franche-Comte to Spain. 5. In the war between Louis XIV. and the Netherlands, from 1672 to 1678, a congress was first opened at Cologne, in 1673, but was dissolved in the following year, because the imperial ambassador had arbitrarily seized the elector of Cologne, and sent him from that city to Vienna. The British ambassadors (among whom was the famous Sir William Temple) and the papal envoy then carried on, as mediators, the negotiations for peace between France, Spain, the Netherlands, the German emperor, Sweden, Denmark, Brandenburg, and some small states, at the congress of Nimeguen, from 1676 to the conclusion of the peace of Nimeguen, in 1678, which consisted of several separate treaties of peace; between France and the Netherlands; between France and Spain; between France, Sweden, and the German empire, in 1679, of which the peace with Brandenburg, at St Germain-en-Laye, and that with Denmark at Fontainebleau and Lund, together with that of Nimeguen, between Sweden and Holland, were the immediate consequences. Thus French diplomacy, by dividing the allies, obtained the victory at this congress, and secured, for a long time, the political superiority of Louis XIV. 6. The taking of Strasburg, which happened during the peace of 1681, and the re-union system of Louis, caused the great alliance of the Hague (of which William III. was the soul) against the pretensions and usurpations of France. Sweden and Holland first united; then the emperor, Spain, and some German circles joined the league, to support the peace of Westphalia and of Nimeguen; and as the emperor was already engaged in a war against the Turks, recourse was had to negotiation rather than to arms. This was the object of the famous congress of Frankfort, in 1681, which was broken off by the French, in December, 1682, but was afterwards continued at Ratisbon, and ended by a truce of twenty years with France, in 1684. But in vain did the European powers seek, by alliances with each other, and particularly by the great league of Augsburg (association), in 1686, effected by the stadtholder of Holland, William III., to put limits to the ambition of Louis, for, in September, 1688, the French armies invaded the countries on the Rhine. This, and the expulsion of the house of Stuart from the throne of Britain by William III., in November, 1688, was the cause of a war of nine years. 7. Designs on the Spanish succession induced Louis, though victorious, to attempt to divide the allies by separate treaties, and, not succeeding in this, he sought the mediation of Sweden; by means of which a congress was convened at Ryswick, a castle near the Hague, in May, 1697. The negotiations were carried on (round a circular table, in the hall of conference, which prevented all disputes about precedency) on the principles of the peace of Westphalia and that of Nimeguen. But the French, by separate treaties with the allies, obtained the direction of the negotiation, and their skilful diplomacy obliged the German empire to accept the conditions determined upon by France with Spain, Great Britain, and the Netherlands. The peace of Ryswick was signed by the naval powers, Sept. 20, and by the emperor, Oct. 30, 1697. To this period belong certain other congresses, in which the political relations of the northern powers towards Poland and the Porte were settled. 8. The most famous is that which took place at Oliva, a monastery near Dantzic, in May, 1660, where France mediated a peace between Sweden and Poland, and to which the German emperor, the elector of Brandenburg, the Duke of Courland, and other inferior princes, sent ministers. The plenipotentiaries of the Dutch republic, of Denmark, and of Spain were not admitted. The peace of Oliva, May 3, 1660, confirmed the political superiority of Sweden in the north, secured to it the possession of Livonia, and established the sovereignty of Prussia. At the same time, Britain, Holland, and France mediated the peace of Copenhagen, concluded May 27, 1660, between Sweden and Denmark. The negotiations at Oliva were finally completed by the peace between Sweden and Russia, at Cardis, July 1, 1661. 9. Particular congresses were convened to settle certain disputes between Poland and Russia: at Radzyn in 1670, at Moscow in 1678, at Radzyn and Andrussov in 1684, which resulted in the definitive peace at Moscow, in 1686, by which the power of Poland, which the treaty of Oliva had already shaken, received a second blow. The boundaries between Russia and Poland remained, until 1772, such as they had been fixed by this peace. 10. The congress at Altona, in 1687, where the German emperor and the electors of Saxony and Brandenburg mediated in the disputes between Denmark and the house of Holstein Gottorp, terminated, after Great Britain and the states-general had also been called in as mediators, in the peace of Altona, in 1689, by which the duke of Holstein regained his territories with full sovereignty. 11. To this period belong, also, the conferences at Carlowitz in 1698, where a Turkish sultan first learnt to employ the forms of European diplomacy, accepting the mediation of Great Britain and Holland. In this congress, his first dragoman, Mavrocordato, exhibited a specimen of the diplomatic talents of the Greek nation, settling all questions of rank by a round table. In 1699, he concluded with the German emperor, Poland, Venice, and Russia, at Carlowitz, the treaties of peace, or truces, by which bounds were first set to the

power of the Porte. Venice was obliged to give up Candia and the islands of the Archipelago. It retained, however, the Morea, the Ionian islands, and some places in Albania.

B. From 1713 to 1814. 1. The war of the Spanish succession was ended by the congress at Utrecht, to which France, Britain, the states-general, Savoy, the emperor, Portugal, Prussia, the pope, Venice, Genoa, the electorates of Mentz, Cologne, Treves, the Palatinate, Saxony, and Bavaria, together with Hanover and Lorraine, sent their plenipotentiaries in January, 1712, after France and Great Britain, in the preliminaries settled Oct. 8, 1711, had drawn the outlines of the peace, and had thus already decided, to a certain degree, the new relations which were to exist between the states. At Utrecht, also, French diplomacy succeeded in breaking the union of the powers interested, by a regulation that each of the allies should give in his demands separately. The dissensions between them increased when they saw that the negotiations of Great Britain were, for the most part, carried on in secret, and immediately with the court of Versailles. The result was eight separate treaties of peace, which France, Spain, Britain, Holland, Savoy, and Portugal made with each other, between 1713 and 1715, leaving Austria and the empire to themselves. (See *Utrecht, Peace of.* Since that time the British, from their naval and commercial power, have taken the lead among the principal states, and the interest of Britain has determined the fate of the European system of a *balance of power*, as it is called. 2. The congress of Baden, in June, 1714, was a mere act of form to change the peace concluded at Rastadt by Eugene and Villars, in the name of the emperor and of France, and which rested upon the peace of Utrecht, into a peace of the empire (drawn up in Latin). 3. The congress at Antwerp was also a consequence of the peace of Utrecht. Britain there mediated between the emperor of Germany and the states-general, and concluded the barrier treaty of Nov. 15, 1715. 4. The congress at Cambray, in 1722, was held to settle the disputes between the emperor, Spain, Savoy, and Parma, with regard to the execution of the peace of Utrecht and the conditions of the quadruple alliance, Britain and France being mediators. But Philip V. of Spain, offended by the rejection of his daughter, who had been betrothed to Louis XV. (in April, 1725), recalled his minister from Cambray, and concluded a peace with Austria at Vienna, April 20, 1725, in which he became guarantee for the pragmatic sanction. The defensive alliance, soon after concluded between Austria and Spain, was followed by a counter-alliance between Britain, France, the United Provinces, Denmark, Sweden, Hesse-Cassel, and Wolfenbuttel, formed at Herrnhausen. On the other hand, Russia, Prussia, and some German states, joined the alliance of Vienna. A general war appeared to be approaching, when Austria, by the temporary suspension of the company of Ostend, and Spain, by the treaty with Britain at the Pardo, opened the way for reconciliation. 5. The congress at Soissons, in June, 1728, was convened to effect a similar settlement between Austria, France, Britain, and Spain; but the French minister, cardinal Fleury, succeeded in dividing Spain and Austria, and France, Spain, and Britain formed a treaty of amity and mutual defence, at Seville, in 1729 (to which Holland acceded), in order to give law to Austria. The congress at Soissons was thus dissolved, and injured Austria took up arms. But the guarantee of the pragmatic sanction, which Britain and Holland undertook, induced the emperor Charles VI., in 1731, to accept the conditions of the treaty of Seville. 6. The congress at Aix-la-Chapelle, in April, 1748, in which France, Austria, Britain, Spain, Sardinia, Holland, Modena, and Genoa took part, terminated the war of the Austrian succession by the peace of Aix-la-Chapelle, Oct. 18, 1748. 7. The seven years' war between Britain and France was ended without a congress; but Austria, Saxony, and Prussia concluded a peace at the congress of Hubertsburg, Feb. 15, 1763, the session having lasted from Dec. 1762. 8. The congress at Teschen, in March, 1779, decided the dispute with regard to the Bavarian succession, by the mediation of France and Russia between the contending powers, Austria and Prussia. The elector palatine, the elector of Saxony, and the duke of Deux-Ponts, sent their ministers, but not the elector of Bavaria, whose hereditary succession was the subject of negotiation. (See *Teschen, Peace of.*) 9. Russia and Austria offered their mediation to France and Britain in the war of the American revolution. Vienna was proposed for the place of meeting; but France refused the mediation; and when the Russian and Austrian ministers wished to take part, as mediators, in the congress opened at Paris, in October, 1782, by the ministers of France, Spain, Britain, Holland, and the United States, the preliminaries of peace were settled without their knowledge, Nov. 30, 1782, and Jan. 20, 1783, also the definitive treaty of Versailles and of Paris, Sept. 3, 1783, and that with Holland, May 20, 1784. 10. The disputes of Joseph II. with the republic of Holland, relating to the opening of the Scheldt, and other subjects, in 1784, induced France to offer its mediation; and a congress was opened at Versailles, Dec. 8, of the same year, by the French minister count Vergennes, and the imperial and Dutch ministers. It ended with the treaty of Fontainebleau, Nov. 8, 1785, by which the barrier treaty of 1715, and the treaty of Vienna, in 1731, were annulled, the boundaries of Flanders restored as they were in 1664, several strips of land yielded up to the emperor, and, as a compensation for his claims, a sum of 10,000,000 florins, of which France contributed 4,500,000, to prevent the congress from being dissolved. On the other hand, the Scheldt remained closed, and the emperor gave up the rest of his claims. 11. When Leopold II. was on the point of suppressing, by force of arms, the insurrection of the Netherlands, in consequence of the convention of Reichenbach, a congress was opened, in September, 1790, at the Hague, by the ambassadors of Austria, Prussia, Holland, and Britain, to which the deputies of the Belgian provinces were also admitted. These powers concluded, Dec. 1 of this year, the convention of the Hague, by which, however, the emperor was willing only to confirm to the Belgic provinces the old constitution, as it was at the time of the death of Maria Theresa. New disputes and commotions thence arose. Finally, Francis II., in March 1793, restored the old constitution, as it had been under Charles VI., and swore, at Brussels, in April, 1794, to the *joyeuse entree*; but it was too late, for Belgia was soon after conquered by the French. 12. In the history of the wars of the French revolution, the fruitless congress at Rastadt deserves mention. It was opened by the deputation of the empire, under the presidency of the directorial subdelegates of Mentz, baron Von Albini, in presence of the imperial plenipotentiary count Metternich, Dec. 9, 1797, and dissolved by him, April 7, 1799, by an imperial decree. The ancient dignity of the German empire was manifested on this occasion merely by a vain formality, with which the insulting haughtiness of the French ministers formed a striking contrast. The deputation gave their notes in German, the French ambassadors in French. With regard to the object of the meeting, the deputation resembled a person blindfolded, and crippled, hand and foot; for the secret articles of the peace of Campo-Formio, and the conditions of the secret convention of Rastadt, Dec. 1, 1797, remained unknown to it. Theuce arose disputes and mistrust, especially between Austria and Prussia; and while the deputation was groping in the dark, it stumbled over every obstacle, and laid itself open continually to its adversaries, so that the sub-delegate of Baden, among other reasons by which he attempted to exculpate himself for having given up the whole left bank of the Rhine, mentioned the anger of the French ministers when they heard that only a part of it was to be given to them. The French diplomatists at Rastadt neglected the ancient forms of courtesy; the German frequently acted with pusillanimity and timidity. The whole terminated by a bloody crime, April 28, 1799, probably occasioned by the arbitrary measures of a man of a violent character, who wished for personal vengeance, and the blind rage of the subordinate officer whom he had charged to execute it. (See *Rastadt.*) The conditions of the cession of the left bank of the Rhine, and the compensation made to the princes who were thus injured, by secularizing the ecclesiastical possessions, having been already accepted by the deputation at Rastadt, were, without a convocation of the empire, afterwards presented as articles of peace, in the peace of Luneville in 1801. 13. The congress at Amiens, where Joseph Bonaparte and the marquis of Cornwallis negotiated for a definitive peace between France and Britain, from December, 1801, to March 27, 1802, Malta being the most difficult matter of dispute, and the Spanish and Dutch ministers taking part in the negotiations only where the interests of their respective powers came in question, was terminated by the treaty of Amiens, concluded by the four plenipotentiaries, March 27, 1802, to which the Porte acceded May 13, 1802, but which was dissolved by a declaration of war, on the part of Britain, March 18, 1803. 14. Napoleon commonly negotiated his treaties with arms in his hands; he therefore needed no mediator. But when he was preparing to conquer Spain, and wished to secure his rear towards Germany and Poland, and therefore to form a closer alliance with Russia, and make again an attempt to induce Britain to join in the general peace, the first European congress of monarchs was called together at Erfurt, in October, 1808. Napoleon arrived there September 27, and, a few hours afterwards, the emperor Alexander. They found there, already assembled, the kings of Saxony, Bavaria, and Wurtemberg, Jerome, then king of Westphalia, the grand-duke Constantine, prince William of Prussia, the dukes of Saxe-Weimar, Saxe-Gotha, and Holstein-Oldenburg, with several other princes, together with the ministers of state of these courts, and the ministers from Prussia, Denmark, Wurtzburg, the prince primate, Badeu, and several others. The baron Von Vincent appeared in the name of the emperor of Austria, with a letter, in which he declared his friendly dispositions towards France. The negotiations related to a diminution of the contributions imposed by France on Prussia, and the admission of the duke of Oldenburg into the confederation of the Rhine; but the principal subject of discussion was the peace with Britain, the relations between France and Austria, and the affairs of Turkey. The British government, by a circular letter of Oct. 12, declared its readiness to take into consideration the offers of peace made by the emperors of France and Austria, if Swedeu and Spain were represented in the congress by their plenipotentiaries; but, as Napoleon would not grant this right to the Spanish nation, the negotiations were broken off in December.—The assembly at Erfurt immediately separated. Oct. 14, after Napoleon thought he had secured peace with Austria, and had had several private interviews with the emperor Alexander, the purport of which is not precisely known. (See Scholl's *Traites de Paix*, vol. 9, p. 194. Bignon's *History of French Diplomacy*, recently published, and which has not as yet reached us, probably contains much information on this, as well as many other points). To this period belong, also, 15. The two fruitless congresses at Brunswick, in the course of the northern war. The first was dissolved in February, 1713, and the second in March, 1714. 16. The congress opened by the Holstein minister Gortz, baron Von Schlitz, in the name of Charles XII., with the plenipotentiaries of the czar, upon the island of Aland, in 1718. But the peace there negotiated, upon conditions tolerably favourable to Sweden, was rendered invalid by the death of Charles XII., and the party spirit of the Swedish nobility, to which Gortz fell a victim. The Swedish government broke off the negotiations with Russia upon the island of Aland, and, by the mediation of France, concluded, at the

congress of Stockholm, separate treaties of peace with Hanover, Nov. 20, 1719, and, in 1720, with Prussia, Denmark, and, provisionally, with Poland. Finally, Sweden, by the mediation of France, was obliged to conclude peace, Sept. 10, 1721, at Nystadt (where the congress had assembled in May, 1721), upon terms dictated by the czar, which established the preponderance of Russia in the North. This was followed by the conclusion of the definitive treaty of peace with Saxony and Poland, in 1729 and 1732. 17. The war which broke out in 1741, between Sweden and Russia, was ended by the definitive treaty of peace concluded at Abo, August 17, 1743, at the congress held there by Russian and Swedish ministers, after Sweden had chosen, as the successor to the throne, the bishop of Lubeck, Adolphus Frederic, duke of Holstein-Gotturp, instead of the crown prince of Denmark. This was followed by the treaty of St. Petersburg, between Russia and Sweden, in 1745. While the mediation of foreign powers was refused by Russia, especially under the reign of Catharine II., in its treaties with Sweden, Poland, and the Porte, it was employed in the disputes between Austria and the Porte. 18. The congress of Passarowitz, by the mediation of Great Britain and Holland, put an end to the war which had broken out in 1714 and 1716, between the Porte and Austria and Venice, by the peace of Passarowitz, July 21, 1718, by which the Morea was left in possession of the Porte, as a conquered province, without any mention of it being made in the treaty. 19. The Porte, in a war with Russia, in 1736 desired the mediation of Austria, Holland, and Great Britain; but Russia refused the mediation of the naval powers, so that the congress at Niemiroff, in Poland, in June, 1737, consisted only of ministers from the Porte, Russia, and Austria. But when Austria declared war against the Porte, France acted as mediator. The negotiations were broken off in October, but they were renewed and carried on, partly in Constantinople, partly in the camp of the grand vizier, by the French Ambassador, M. De Villeneuve, who had received secret instructions, on this subject, from the emperor Charles VI., and the empress Anna, of which, however, their ministers, count Von Siuzendorf and count Ostermann, who, on their side, were negotiating for a private peace with the Porte, knew nothing. Finally the Austrian general count Neipperg concluded a preliminary treaty, Sept 1, 1739, in a very hasty manner, with the guarantee of France, by which Belgrade, though in a good state of defence, was surrendered to the Turks. Villeneuve, now concluded with Austria and with Russia, Sept. 18, 1739, the definitive treaty of Belgrade, which was extremely advantageous for the Porte, and signed it as plenipotentiary of the Russian empress, without the knowledge of field marshall Munich, who had likewise received full power to make peace with the Porte. 20. In the war of Russia with the Porte, from 1768 to 1774, a congress was held by the Russian and Turkish ministers, in August, 1772, at Focsani, in Moldavia, where appeared, also, an Austrian and a Prussian minister; but Catharine would not recognize them as mediators, and they only learnt in secret, from the Turkish ambassador, the course of the negotiations. This congress, however, soon after separated. A second congress, also, assembled in October, 1772, at Bucharest, to which these two ministers were likewise refused admittance, was dissolved, without having effected anything, in March 17, 1773, probably through the influence of the French in the divan. Finally, the grand vizier, cut off from Adrianople, saw himself obliged, without further negotiation, to accept peace upon the conditions of the Russian general, count Rumanzoff; and he signed it in the tent of the latter, at Kutschuk Kainardgi, July 21, 1774. 21. In the war between Russia and Austria and the Porte, in 1787 and the following years, Catharine likewise refused all mediation; but Austria was obliged to accept it, and a congress met in June, 1790, at Reichenbach, where count Herzberg, in the name of Prussia, negotiated with Austria, and in which Poland, Great Britain, and the states-general took part. To avoid a war with Prussia, Austria resolved to accept the *ultimatum* of the Prussian cabinet. Thus the convention of Reichenbach was made, July 27, according to which Austria concluded the peace of Sistova with the Porte, Aug. 4, 1791, in which place a congress had assembled in January of the same year, consisting of Austrian and Turkish ministers, together with those of the mediating powers—Great Britain, Prussia, and Holland. Negotiations were afterwards carried on at St Petersburg, by the mediating powers, for a peace between Russia and the Porte. The preliminaries, however, were settled immediately by the grand vizier and prince Repnin, at Galacz, Aug. 11, 1791, and the peace of Jassy was concluded Jan. 9, 1792. 22. In the war of Russia with the Porte, from 1806 to 1812, after Alexander's return from Erfurt, a congress was held at Jassy, in August, 1809, by Russian and Turkish ministers; but the demands of Russia induced the Porte to break off all negotiations. The Porte, at last, however, determined to ask for peace; and a congress assembled at Bucharest, in December, 1811, where, by the mediatiou of Great Britaiu and Sweden, although the French emperor, in his treaties with Austria and Prussia, in March, 1812, had stipulated for the integrity of the possessions of the Porte, peace was made, May 28, 1812, at the very moment when the armies of Napoleon were preparing to invade Russia. We ought also to mention in this period the only congress held by a European and an American power—the congress at Ghent. After the war between Great Britain and the United States, commencing in 1812, both powers sent ministers to Ghent. The British commissioners arrived in that city, in August, 1814; the American commissioners were already assembled there. This congress lasted until December, 1814, on the 24th of which month peace was concluded (see *Ghent, Peace of*), after the mediation, proposed by Russia, early in 1813, and accepted by the United States, who had sent ministers to St Petersburg for the purpose of treating with Great Britain, had been declined by the cabinet of St James. (See Lyman's *Diplomacy of the United States*, 2d ed. vol. ii. p 50 et seq.)

C. Congresses from the year 1814. Since this year, as we have stated at the beginning of this article, congresses have been held by governments to take measures in opposition to the wishes of the nations, and the demands of the spirit of the age. Never, therefore, have monarchs agreed so well, and acted so much in concert, as in this period, because they have felt it necessary to make common cause against liberty; and never were so many congresses held in the same space of time, because constant instances of insubordinat on have required continual consultation, and the uneasy state of the monarchs at home has made them fond of assembling in congresses. In this period, a most pernicious and unprecedented principle has been established, that every monarch has a right to interfere in the internal affairs of foreign nations; so that Alexander of Russia treated the concerns of Spain as if they were his own, feeling that every despot was interested in preventing the progress of liberal principles. This principle naturally gave rise to the *droit d'intervention armee.* (See *Intervention, armed.*) This obnoxious principle was promulgated at the congress of Laybach.* During the war of the allies against Napoleon, congresses were held at Prague, in 1813, and at Chatillon (q. v.), in February and March, 1814. In the subsequent peace, it was agreed that a general congress at Vienna should complete the different stipulations then entered into. 1. Congress at Vienna (see *Vienna, Congress at*). 2. Congress at Paris. The principles and stipulations of the congress of Vienna were confirmed in the conferences of the Austrian, British, Prussian, and Russian ministers with the French minister, the duke de Richelieu, at Paris, the consequence of which was the conclusion of the treaty of Nov. 20, 1815, after the protocol of Nov. 3, issued by the same plenipotentiaries, had settled the territories of several German princes, with reference to the cessions made by France, and to the system of defence of the German confederation, and after the way in which the resolutions of the congress of Vienna were to be ratified, and the accession of other powers to it was to take place, had been agreed upon. Besides this chief treaty, several other measures were determined upon at this congress; for instance, the convention of Aug. 2, 1815, relating to the guard to be kept over Napoleon; the definitive treaty of Nov. 5, 1815, which placed the Ionian islands, as a confederacy, under the exclusive protection of Great Britain; the treaty of neutrality of Switzerland, Nov. 20, 1815, which was also signed by France; the treaty of alliance between the four powers of the same date, by which they pledged themselves to assist each other in maintaining the new political system, for which reason they were to occupy France, for some years, with an army of 150,000 men. After the conclusion of the congress at Paris, twelve more particular treaties between different powers were concluded in 1816, 1817, and 1818, concerning partly the new settlement of the territorial relations, partly the payments which France was obliged to make, the restoration of Parma to the Spanish infanta, duchess of Lucca, and the abolition of the slave trade. 3. For the completion of the work of the monarchs, it was still necessary to provide for a full reconciliation with France, by the withorawal of the army, composed of British, Austrian, Russian, Prussian, and other German troops. It was determined upon at the congress of Aix-la-Chapelle (q. v.), in October and November, 1818, chiefly by the mediation of Wellington, after France had completed the payment of certain sums, to which she had obliged herself. The most important consequence of this congress was the accession of the French sovereign to the alliance of the four great powers. The five powers then published, at Aix-la-Chapelle, the famous declaration, of Nov. 15, 1820, which, in the spirit of the holy alliance (q. v.), pronounced the principles that were to regulate, in future, the politics of Europe, the aim of which was to be a lastiug peace. The work of Stourdza (a Russian civil officer; see *Stourdza), Memoire sur l'Etat actuel de l'Allemagne*, published during the congress of Aix-la-Chapelle, excited the suspicions of the monarchs against the liberal spirit in Germany, which they had themselves inflamed by different kinds of promises and excitements of the national feeling, when they wished to avail themselves of its aid for the purpose of subduing Napoleon, but which they now dreaded in the same degree, as they were unwilling to fulfill their promises, and the just demands of the nations and the age. Unfortunately, the rash acts of two German youths (one of them, the celebrated Sand, killed Kotzebue; the other, Lohning, attempted to kill a president of the government of Nassau) afforded the German governments the occasion which they desired for the enforcement of illiberal measures. These were determined upon at the congress of Carlsbad (q. v.), which was assembled, partly for

* The frequency and abuse of congresses have been satirized by the keen and spirited Beranger, in his poem *La Mort du Roi Christophe, ou Note présentée par la Noblesse d'Haiti aux Trois Grands Alliés, Décembre, 1820*, of which we cannot refrain from quoting the first verse:—

Christophe est mort, et du royaume,
La noblesse a recours à vous.
François, Alexandre, Guillaume,
Prenez aussi pitié de nous.
Ce n'est point pays limitrophe,
Mais le mal fait tant de progrès!
Vite, un congrès!
Deux, trois congrès!
Quatre congrès!
Cinq congrès! dix congrès!
Princes, vengez ce bon Christophe,
Roi digne de tous vos regrets.

this purpose, partly for supplying some deficiencies in the acts of the congress of Vienna, relative to the internal organization of Germany. 5. Soon after this congress, another, composed of ministers, assembled at Vienna, Nov. 25, 1819, where Metternich presided. The doings of this congress had reference entirely to the organization of the German confederation, and the suppression of the liberal spirit in Germany. Their final act was signed May 15, 1820. The three following congresses, at Troppau, Laybach, and Verona, concerned the affairs of Europe in general. 6. The congress at Troppau (q. v.) lasted from October to December, 1820. The congress was held on account of the revolutions in Spain and Portugal, and was transferred to Laybach, when the revolution of Naples broke out. 7. The right of interfering in the internal affairs of other nations, agreed upon at Troppau, was, in 1821, diplomatically admitted into the international code of the European continental powers at the congress of Laybach. The consequences of the congress at Laybach, from whence the allied powers issued a proclamation against Naples, were the occupation of Naples, Sicily, and Piedmont, by Austrian armies; the abolition of the Spanish constitution in these countries, and the restoration of the old order of things. (See *Naples, Sicily,* and *Piedmont Revolutions of.*) If Austria had not succeeded, a Russian army of 80,000 men, which had already begun to march towards Hungary, would have entered Italy. After the Austrians had acquired their object in Naples and Piedmont, the two emperors concluded the congress of Laybach by a proclamation, signed by the ministers of Austria, Prussia, and Russia, May 12, 1821, in which they declared that the justice and disinterestedness which had guided the councils of the monarchs, would always be the rule of their politics. This congress is also famous for a speech of the emperor of Austria to the professors of a public seminary at Laybach, in which he directed them to be careful not to teach their pupils too much; he did not want learned or scientific men, but obedient subjects. 8. The two emperors had determined, at Laybach, to hold a new congress, in 1822, at Florence. Verona was afterwards substituted for Florence, and a congress held there from Oct. to Dec., 1822, on account of Spain and Portugal, and the political state of Italy and Greece. The war of France against Spain, in 1823, was a consequence of this congress, which was remarkable for the spirit displayed by the duke of Wellington; the same which prevailed in the British ministry from the appointment of Canning to the secretaryship of foreign affairs (Sept. 16, 1822). The duke, the British minister at Verona, opposed the undertaking any measure against the Spaniards, as long as they left their king unmolested, and did not labour to extend their constitution beyond their borders. As respected Turkey and Greece also, Britain wished for no interference of the other powers, but to leave them to themselves. In America, only one international congress has been held, and that of little importance. It was called the *congress of Panama.* The project of a general union of the new Spanish American republics was early conceived by different leaders of the revolution. The first attempt to carry this plan into execution was made by Bolivar, in 1823. As president of the republic of Colombia, he invited the governments of Mexico, Peru, Chile, and Buenos Ayres, to send delegates to the isthmus of Panama, or wherever they should think proper, to constitute a congress with full powers to treat of matters of general interest to the republics. Mexico and Peru immediately acceded to the proposal, but Buenos Ayres and Chile showed no inclination to take part in the congress. In Dec., 1824, Bolivar sent a circular to each of the governments, recapitulating what had already been done, and proposing that the meeting should take place. Accordingly, in June, 1826, the delegates from Colombia, Mexico, Peru, and Guatemala assembled at Panama; Chile and Buenos Ayres still holding back, it is said, in consequence of suspicions of an ambitious scheme of Bolivar to incorporate the four south American republics into an empire, of which he was to occupy the throne. The declaration of the United States of North America, in 1825, that they would permit no ulterior colonization in any part of the continent by European powers; that they should consider any attempt on the part of those powers to extend the system of national interference to any portion of this hemisphere dangerous to their peace and safety; and that any interposition, by any European power, for the purpose of controlling, in any manner, the governments of America, which had established their independence, would be considered as the manifestation of an unfriendly disposition towards the United States, led the South American states to invite this republic to join in the general confederation. Ministers to the congress were, in fact, appointed; but, before their arrival, the congress had adjourned (after concluding a treaty of friendship and perpetual confederation) to the succeeding February. The place appointed for the new session, which has never taken place, was the village of Tacubaya, near Mexico. The three great points held out by the originators of this plan were, the independence, peace, and security of the Spanish American republics. The congress was intended to form a permanent council, to serve as a bond of union against common dangers, to interpret the treaties between the states, and mediate in all disputes; it was further an object, particularly with the United States, to settle, through this body, disputed principles of international law, to abolish usages of war inconsistent with the spirit of the age, and to embody the principles of American republicanism in an imposing form, in opposition to the doctrines of the European alliance of kings.

CONGRESS OF THE UNITED STATES OF AMERICA. The national legislature of the United States of America is designated, in the constitution of the general government, by this title. It consists of a senate and a house of representatives, each constituting a distinct and independent branch. The house of representatives is composed of members chosen every second year, by the people of the several states; and the voters or electors are required to have the same qualifications as are requisite for choosing the members of the most numerous branch of the state legislature of the state in which they vote. The representatives are apportioned among the several states according to their respective population; and, in estimating the population, three-fifths of the slaves are added to the whole number of free persons. A census of the population is taken once in every ten years, and an apportionment is then made of the representatives for each state. The representatives are then elected in each state, either in districts, or by a general ticket, as the state legislature directs. There cannot be more than one representative for every 30,000 persons. The present apportionment is one representative for every 40,000 persons. Each state, however small may be its population, is entitled to at least one representative. No person can be a representative who shall not have attained the age of twenty-five years, and have been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state in which he shall be chosen. No other qualifications are required. When vacancies happen in the representation of any state, by death, resignation, or otherwise, new writs of election are issued by the executive thereof to fill the vacancy. The house of representatives chooses its own speaker and other officers, and possesses the sole power of impeachment. Each representative has a single vote.

The senate of the United States is composed of two senators from each state; and, there being twenty-four states, the senate now consists of forty-eight members. The senators of each state are chosen by the legislature of the state for six years, and each senator has one vote. They are divided into three classes, so that one-third thereof is or may be, changed by a new election every second year. When vacancies happen, they are supplied by the state legislature, if in session; if not, the state executive makes a temporary appointment until the legislature meets. No person can be a senator who is not thirty years of age, and has not been nine years a citizen of the United States, and is not, when elected, an inhabitant of the state for which he is chosen. The vice-president is, *ex officio,* president of the senate; but he has no vote unless they be equally divided. The senate chooses all its other officers, and a president, *pro tempore,* in the absence of the vice-president, or when he exercises the office of president of the United States. The senate has the sole power of trying all impeachments; and, when sitting for this purpose, the senators take an oath or affirmation. If the president of the United States should be impeached, the chief-justice is to preside. A conviction on impeachment cannot be without the concurrence of two-thirds of the members present. The judgment extends only to a removal from office and future disqualification for office. But the party is, nevertheless, liable to punishment on indictment, by the common trial and course of law.

The times, places, and manner of holding elections for senators and representatives, are appointed by the state legislatures; but the congress may, by law, fix and alter the time and manner of holding such elections. Each of the two houses, viz., the senate and representatives, is the judge of the elections, returns, and qualifications of its own members. Each house determines the rules of its own proceedings,

and has power to punish its members for disorderly conduct, and, with the concurrence of two-thirds, to expel a member. A majority of each house constitutes a quorum to do business; but a smaller number may adjourn from day to day, and has power to compel the attendance of absent members, in such manner as it may provide. Each house is required to keep a journal of its proceedings, and, from time to time, to publish the same, excepting such parts as, in its judgment, may require secrecy. In point of fact, they are published every day or two, during the session, and collected in volumes at the end thereof. The yeas and nays of the members of each house, on any question, are required, at the desire of one-fifth of those present, to be entered on the journal. The congress is required to assemble at least once every year; and such meeting is on the first Monday of December annually, unless a different day is provided by law. The president of the United States has authority to convene extra sessions. Neither house, during the session of congress, can, without the consent of the other, adjourn more than three days, nor to any other place than that in which the two houses shall be sitting. In case of disagreement between the two houses, as to the time of adjournment, the president of the United States may adjourn them to such time as he shall think proper. The senators and representatives are entitled to receive a compensation, provided by law, for their services, from the treasury of the United States. They are also privileged from arrests, except in cases of treason, felony, or breaches of the peace, during their attendance at the session of their respective houses, and in going to and returning from the same. This does not mean merely their daily attendance; but, also, in going from or returning to their respective homes, in the several states. They have liberty of speech, and are not liable to be questioned, in any other place, for any speech or debate in either house. No senator or representative can be appointed to any civil office under the authority of the United States, which is created, or its emoluments increased, during the time for which he is elected; and no person, holding an office under the United States, can be a member of either house during his continuance in office. It has been already stated, that each house determines the rules of its own proceedings; and, in point of fact, each house now has a large collection of rules, which are printed for the use of the members, and for the public at large. In a general sense, the rules and practice of the British house of commons form the basis of their proceedings, modified from time to time, as each house deems fit. The rules are too numerous to admit of any useful summary in this place. There are, however, certain constitutional provisions, as to the proceedings of the two houses, which deserve to be mentioned. All bills for raising revenue must originate in the house of representatives; but the senate may propose or concur with amendments, as on other bills. Every bill which has passed the senate and house of representatives, before it can become a law, must be presented to the president of the United States. If he approve, he signs it; if not, he returns it to the house in which it originated, with his objections, and these objections are entered at large on their journals, and they then proceed to reconsider. If, upon reconsideration, two-thirds of such house agree to pass the bill, it is sent, with the objections, to the other house, by which it is also to be reconsidered; and, if approved by two-thirds of that house also, it becomes a law. But in all such cases, the votes of both houses are determined by yeas and nays, and the names entered on the journals. No instance has, as yet, occurred, in which any bill, returned by the president with objections, has ever become a law by a vote of two-thirds of each house. If any bill is not returned by the president within ten days (Sundays excepted) after it is presented to him, it becomes a law, in the same way as if he had signed it, unless congress, by their adjournment, prevent its return. Every order, resolution, or vote, to which the concurrence of both houses is necessary, must, in like manner, be presented to the president, and similar proceedings are to be had thereon. The legislative powers belonging to congress will now be stated, in the words of the constitution itself, since different modes of interpretation of the same language have, at different times, been insisted on by different parties in the United States. Congress, then, by the constitution, has power to lay and collect taxes, duties, imposts, and excises, to pay the debts, and provide for the common defence and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States: —to borrow money on the credit of the United States:—to regulate commerce with foreign nations and among the several states, and with the Indian tribes:—to establish a uniform rule of naturalization, and uniform laws on the subject of bankruptcy throughout the United States:—to coin money, regulate the value thereof, and of foreign coins, and to fix the standard of weights and measures:—to provide for the punishment of counterfeiting the securities and current coin of the United States:—to establish post-offices and post-roads:—to promote the progress of science and useful arts, by securing, for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries:—to constitute tribunals inferior to the supreme court:—to define and punish piracies and felonies committed on the high seas, and offences against the law of nations: —to declare war, grant letters of marque and reprisal, and make rules concerning captures on land or water:—to raise and support armies; but no appropriation of money to that use shall be for a longer term than two years:—to provide and maintain a navy:—to make rules for the government and regulation of the land and naval forces:—to provide for calling forth the militia to execute the laws of the union, suppress insurrections and repel invasions:— to provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the states, respectively, the appointment of the officers, and the authority of training the militia according to the discipline prescribed by congress:— to exercise exclusive legislation in all cases whatsoever over such district, not exceeding ten miles square, as may by cession of particular states, and the acceptance of congress, become the seat of the government of the United States; and to exercise like authority over all places purchased by the consent of the legislature of the state in which the same shall be, for the erection of forts, magazines, arsenals, dock-yards, and other needful buildings;—and "to make all laws which shall be necessary and proper for carrying into effect the foregoing powers, and all other powers vested by this constitution in the government of the United States, or in any department or office thereof."

Congress has also power to organize the supreme court, and to ordain and establish, from time to time, inferior courts. In some cases, the original jurisdiction of the supreme court is expressly given in the constitution; but its appellate jurisdiction is under the regulation of congress. Congress has, in other cases, an unlimited authority, as to the jurisdiction which shall be vested in other inferior courts to

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